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STS OPS FLIGHT PRD, VOLUME I

PRD/PSP/OR/OD
GSFC AS SUPPLIER
DATABASE PULL 08052004

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STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 1031 - INDEX

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

SECTION	TITLE
1000	ADMINISTRATIVE
1031	INDEX
1050	ABBREVIATIONS/ACRONYMS
1051	TEST CODE DEFINITION
1052	SPECIAL CODE DEFINITION
1060	KEY TECHNICAL PERSONNEL
1070	TECHNICAL REFERENCES
1100	PROGRAM DESCRIPTION
1400	TEST VEHICLE INSTRUMENTATION SYSTEMS
1405	TEST VEHICLE INSTRUMENTATION FREQUENCY SUMMARY
1410	TEST VEHICLE METRIC SYSTEMS DESCRIPTION
1420	TEST VEHICLE TELEMETRY SYSTEM DESCRIPTION
1430	TEST VEHICLE COMMAND SYSTEM DESCRIPTION
1480	OTHER TEST VEHICLE SYSTEMS
2000	TEST REQUIREMENTS/SUPPORT PLANS
2010	SUPPORT PLAN SUMMARY
2100	METRIC DATA
2200	TELEMETRY DATA
2300	COMMAND SYSTEMS
2413	VISUAL COUNTDOWN
2600	OTHER SYSTEMS
2700	COMMUNICATION
2710	AIR/GROUND VOICE COMMUNICATIONS
2730	VOICE NETWORK TRANSMISSION
2732	TELETYPE NETWORK TRANSMISSION
2734	VIDEO/DATA NETWORK TRANSMISSION
2750	VOICE TERMINATIONS
2752	POINT-TO-POINT TERMINATIONS
2753	TELETYPE TERMINATIONS
2755	VIDEO/DATA TERMINATIONS
2757	MISCELLANEOUS TERMINATIONS
2760	COMMUNICATIONS RECORDINGS
2770	TELEPHONE
2780	OTHER COMMUNICATIONS
2800	VIDEO
3020	REAL TIME DISPLAYS
3200	METEOROLOGY
3250	SPACE ENVIRONMENT METEOROLOGY
3300	RECOVERY
3340	RECOVERY - PLANNED AREAS

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 1031 - INDEX

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD:

ITEM NUMBER: N/A

3350	RECOVERY - CONTINGENCY AREAS
3360	RECOVERY - ABORT AREAS
3410	OTHER TECHNICAL SUPPORT - AIRCRAFT
3421	PROTECTIONS FROM EMITTING SYSTEMS
3440	OTHER TECHNICAL SUPPORT - TRAINING
4100	DATA PROCESSING SPECIFICATIONS
4200	DATA DISPOSITION
4230	DATA DISPOSITION - DETAIL - METRIC
4231	DATA DISPOSITION - DETAIL - TELEMETRY
4235	DATA DISPOSITION - DETAIL - COMPUTER PROCESSING
4236	DATA DISPOSITION - DETAIL - MISCELLANEOUS
5200	TRANSPORTATION
5300	SERVICES
5314	SERVICES - SECURITY AND SAFETY
5320	SERVICES - UTILITIES (ELECTRIC, WATER, AND SANITATION)
5351	SERVICES - GROUND HANDLING EQUIPMENT

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD:      8398      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:      FLT-I      APPROVAL DATE:      11/04/02
INITIAL DATE:      01/12/87
ITEM NUMBER:      T1.3GS      DATE LAST CHANGED: 03/21/03
SECTION:      2000      TIME LAST CHANGED: 13:56:07

REQUESTER:      JSC
SUBREQUESTER:      21SOPS
TEST CODE:      ALPHSE      STSALL
TRACKING NO.      F02-11-1      F907-5
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1. DESCRIPTION: NETWORK SUPPORT OVERVIEW - TDRSS OPERATIONAL - RTS

The 21st SOPS/AFSCN Remote Tracking Station (RTS) network is required to provide contingency support during orbit, entry and landing phase in the event of a TDRSS contingency or if the shuttle K-Band is unavailable for support, and to provide Orbiter emergency or special support (which includes EVA, rendezvous, docking/undocking, docked operations, payload deploy, or International Space Station (ISS) type mission support).

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: 21ST SOPS/VOS GSFC/501

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 03/18/03
RESPONSE: THE RTS HAVE A BEST-EFFORT-BASIS CALL-UP TIME WHEN NOT
SCHEDULED AS A BACKUP SITE.

SUPPLIER: 21 SOPS AGENCY: 501/5 SOPS ()
SUBSUPPLIER: 21 SOPS/VOS

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 03/18/03
RESPONSE: THE RTS HAVE A BEST-EFFORT-BASIS CALL-UP TIME WHEN NOT
SCHEDULED AS A BACKUP SITE.

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[PRD] DATABASE RECORD:      8399      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:      FLT-I      APPROVAL DATE:      06/08/95
INITIAL DATE:      12/06/89
ITEM NUMBER:      T1.4EGX      DATE LAST CHANGED: 11/19/02
SECTION:      2000      TIME LAST CHANGED: 15:53:24

REQUESTER:      JSC
TEST CODE:      ALPHSE      ER      MK98      STSALL
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CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 8399
ITEM NUMBER: T1.4EGX

TRACKING NO. F008-1 F506-2

1. DESCRIPTION: NETWORK SUPPORT OVERVIEW

Selected C-Band stations are required to provide prime support during ascent, orbit and landing phases. On orbit support will include post-insertion, rendezvous, including payload tracking, deorbit preparation, significant TDRSS tracking data losses or degradation due to Doppler compensation, TDRSS maneuvers and higher priority users and stringent state vector accuracy requirements.

RATIONALE: Mandatory - C-band tracking support.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: EAFB ER KMR
WR WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/15/95

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/16/95

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/12/96

[PRD] DATABASE RECORD: 8401 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/05/98
INITIAL DATE: 01/12/87
ITEM NUMBER: T1.7G DATE LAST CHANGED: 11/19/02
SECTION: 2000 TIME LAST CHANGED: 15:53:24

REQUESTER: JSC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 8401
ITEM NUMBER: T1.7G

TEST CODE: ALPHSE STSALL
TRACKING NO. F801-1

1. DESCRIPTION: NETWORK SUPPORT OVERVIEW - DEFINITIONS

GSFC is required to provide network support as defined in the following categories, with the response times indicated.

'CONTINGENCY SUPPORT' category: Any extended duration loss of communications between shuttle and MCC via TDRSS constitutes a TDRSS contingency, whether the cause is at the shuttle or TDRSS or in the links between them or between TDRSS and MCC. Network coverage requested and the level of support provided in response to a TDRSS contingency is called CONTINGENCY SUPPORT, and is required to begin within ninety (90) minutes after notification.

'CONTINGENCY/CRITICAL SUPPORT' category: Same as for CONTINGENCY SUPPORT, except the TDRSS contingency occurs during a critical Shuttle activity, such as rendezvous or extravehicular activity. The required response time is sixty (60) minutes after notification.

'SPECIAL SUPPORT' category: Communication network coverage of shuttle S-band FM television downlink, during periods when shuttle-TDRS Ku-band FM mode channel 3 television downlink is precluded, constitutes SPECIAL SUPPORT. This support must be scheduled.

'EMERGENCY SUPPORT' category: Any MCC outage exceeding six (6) hours, or an Shuttle vehicular safety and integrity problem, or an astronaut health and safety problem, constitutes an emergency. The required response time is as soon as possible after notification.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/12/98

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04
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[PRD] DATABASE RECORD: 212431 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 08/13/02
INITIAL DATE: 03/06/90
ITEM NUMBER: T2EGSX DATE LAST CHANGED: 07/30/04
SECTION: 2000 TIME LAST CHANGED: 14:26:44

REQUESTER: JSC
SUBREQUESTER: 21SOPS
TEST CODE: ALPHSE ER MK98 STSALL

TRACKING NO. F008-1 F01-05-1 F01-10-1 F01-10-1A F02-11-1
F03-08-1 F301-1 F308-3 F401-2 F403-3
F506-4 F506-4A F510-2 F801-1 F803-3
F806-1

1. DESCRIPTION: NETWORK SUPPORT OVERVIEW (GN/RTS AND SN)

The GN is required to provide prime support for pre-launch, KSC launch, ascent, landing and post-landing phases (including DFRC for EAFB landings and WSMR UHF for White Sands Space Harbor landings). The GN is also required for OD PM, FM dumps, TV downlink, (excluding WLPS and PDL), TDRSS contingency support, Orbiter emergency support, or special support (which may include EVA, payload deploy, docking/undocking, rendezvous, ISS type mission support, or scheduled TV).

The network required in support of Shuttle operations will be comprised of:

1. S-band ground stations for providing FM and PM downlink and PM uplinking support.
2. TDRSS for relay of S-band and Ku-band forward and return links.
3. DOD and NASA C-band radar systems for skin track support.
4. DOD and NASA C-band radar systems for beacon track for Launch support only. DFRC does not provide beacon tracking for Launch support.
5. UHF voice for Orbiter communications support.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 212431
ITEM NUMBER: T2EGSX

S-band stations complimented by C-band tracking stations will be required for the Space Shuttle program. For launch and landings, S-band

ground stations will be the primary source to provide uplink/downlink interface with the Orbiter and other Shuttle elements. The SN provides the primary on-orbit uplink/downlink interface with the Orbiter, the GN will provide only limited support. MIL, PDL, & WLP (high inclination flights only) are required to provide primary support of KSC Launch & Landing activities. Until K-Band activation, S-Band stations are the only source of obtaining Orbiter direct FM downlink data. S-Band FM downlink support is required by MIL, WLP, DFRC, and AFSCN.

NASA and DOD C-band tracking will be used during Shuttle Operations flights for launch/landing and orbital support. As Orbiter/TDRSS systems mature and confidence is gained in the TDRS only system, the use of C-Band tracking for orbital support may be minimized. C-Band support will be required and scheduled on a mission-by-mission basis to satisfy Ground Navigation requirements. C-Band will be augment to the TDRSS tracking function.

For Shuttle dual operations, simultaneous support of two Orbiters may occasionally be required. The capability will be required to support 2 shuttle-on-orbit or shuttle-on orbit plus a pad or network test activity.

RATIONALE: Mandatory - Description of Network support.

SUPPLIER: ER	AGENCY: 45 RANS/DOS	(E - 45TH SPACE WING)
SUBSUPPLIER:	EAFB	ER	KMR
	WR	WSMR	

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/02/03

SUPPLIER: GSFC	AGENCY: GSFC/451	(GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER:	GSFC/399	GSFC/427	GSFC/530
	GSFC/553		

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/27/03

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 212431
 ITEM NUMBER: T2EGSX

SUPPLIER: 21 SOPS AGENCY: 21 SOPS (21 SPACE OPERATIONS SQUADRON (21 S)
 SUBSUPPLIER: 21SOPS GSFC/427

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/27/03

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
 SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/30/04

[PRD] DATABASE RECORD: 260848 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 12/12/97
 INITIAL DATE: 01/12/87
 ITEM NUMBER: T3G DATE LAST CHANGED: 11/19/02
 SECTION: 2000 TIME LAST CHANGED: 15:53:25

REQUESTER: JSC
 SUBREQUESTER: JSC/DM
 TEST CODE: ALPHSE STSALL
 TRACKING NO. F712-2

1. DESCRIPTION: SN SUPPORT OVERVIEW

The SN will function in a "bent pipe" concept for telemetry, A/G voice and command support. The A/G voice, and command data received from MCC will be relayed to the Orbiter via the TDRS. The Orbiter A/G voice, telemetry data and video will be received via the TDRS, relayed to the White Sands Complex, demodulated and transmitted to MCC. The Orbiter/TDRS links will consist of S-band PSK and Ku-band forward and return links. Because of the stowed configuration of the Ku-band antenna during Orbiter launches and landings, the SN will not support the Ku-band link during these time frames; however the S-band mode will be used during the periods for launch and landing support. The SN is required to provide UPD/DQM data to the MCC.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
 SUBSUPPLIER: GSFC/530

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 260848
ITEM NUMBER: T3G

SUPPLIER COMMITMENT: WILCO

RESPONSE DATE: 12/22/97

[PRD] DATABASE RECORD: 266367 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 01/12/87
INITIAL DATE: 01/12/87
ITEM NUMBER: T4G DATE LAST CHANGED: 11/19/02
SECTION: 2000 TIME LAST CHANGED: 15:53:25

REQUESTER: JSC
TEST CODE: ALPHSE STSALL

1. DESCRIPTION: SN S-BAND SUPPORT OVERVIEW

For SN S-band data flow, MCC will output forward link voice and command data (32 or 72 kb/s) as a multiplexed bit stream at the data rate to be uplinked. WSC will transmit voice, telemetry, S-band coherent Doppler, and command echo to JSC. The forward and return links will be convolutionally encoded, requiring coding and decoding at the WSC.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530 WSC

SUPPLIER COMMITMENT: WILCO

RESPONSE DATE: 05/26/87

[PRD] DATABASE RECORD: 269297 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/04/02
INITIAL DATE: 03/23/88
ITEM NUMBER: T5G DATE LAST CHANGED: 03/21/03
SECTION: 2000 TIME LAST CHANGED: 13:56:41

REQUESTER: JSC
TEST CODE: ALPHSE STSALL
TRACKING NO. F02-11-1

1. DESCRIPTION: SN KU-BAND SUPPORT

The Ku-band forward link will contain two real-time A/G voice channels and command data multiplexed into a serial bit stream comparable to the S-band high data rate uplink. The data stream

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 269297
 ITEM NUMBER: T5G

will be relayed from the MCC to the Orbiter via NISN circuits and the WSC. A uplink, at 128 kb/s, and a sync channel at 16Kb/s can be added to this uplink for a total data rate of 216Kb/s. The Ku-band return link will consist of three channels in either of two modes: Channel 1 and Channel 2 are the same for both modes; Channel 3 will be a digital channel in mode 1, and analog/TV/digital channel in mode 2.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
 SUBSUPPLIER: GSFC/530/542 WSC

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03

[PRD] DATABASE RECORD: 272101 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 03/08/94
 INITIAL DATE: 01/12/87
 ITEM NUMBER: T6G DATE LAST CHANGED: 12/18/02
 SECTION: 2000 TIME LAST CHANGED: 11:28:18

REQUESTER: JSC
 TEST CODE: EORBIT STSALL
 TRACKING NO. F403-3

1. DESCRIPTION: WSC CONTINGENCY AIR-TO-GROUND SUPPORT

WSC is required to have the capability to generate the Forward Link, in the TDM 32 kb/s or 72kb/s format with fill pattern for the command and unused voice slots. The capability to input this forward link data to the TDRSS for transmission to the Orbiter is required. The analog voice can be generated at WSC or extended from JSC or GSFC via analog voice lines to be digitized and multiplexed on the forward link. WSC is also required to monitor forward link for voice quality. The capability to monitor the orbiter return link, 192 kb/s and 96 kb/s, is required at the WSC, and the voice channels must be available for remoting to JSC and/or GSFC via analog voice channels.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
 SUBSUPPLIER: GSFC/530 WSC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 272101
ITEM NUMBER: T6G

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/08/94

[PRD] DATABASE RECORD: 272954 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/08/94
INITIAL DATE: 02/05/90
ITEM NUMBER: T7EGS DATE LAST CHANGED: 12/18/02
SECTION: 2000 TIME LAST CHANGED: 11:29:19

REQUESTER: JSC
TEST CODE: EORBIT STSALL
TRACKING NO. F008-1 F403-3 F511-2

1. DESCRIPTION: SN CONTINGENCY MODE

The capability is required to assure an adequate level of support restoral for A/G voice, site coordination voice, telemetry data flow, C-band tracking flow and acquisition data in event of catastrophic failures of the TDRSS or at GSFC. The level of support will be that required to assure safe return of the crew and Orbiter.

In the SN contingency Mode, 21SOPS/AFSCN is required to receive from JSC Forward Link serial digitized voice and command data. The data will be received by 21SOPS/RTS at a 32kb/s, or 72 kb/s rate. The OAFB will provide a command voice loop-back at the 21st SOPS for data quality monitoring of the JSC/OAFB command link.

The RTS station will record the output of the CMD verification echo check receiver onto an analog tape. This CMD history tape will be available for up to 48 hours post-pass for transmission to JSC.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER WR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/02/94

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/542 MIL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 272954
ITEM NUMBER: T7EGS

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/08/94

SUPPLIER: 21 SOPS AGENCY: 501/5 SOPS ()
SUBSUPPLIER: 21SOPS

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/08/94

[PRD] DATABASE RECORD: 280883 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/04/02
INITIAL DATE: 06/03/91
ITEM NUMBER: T8GK DATE LAST CHANGED: 03/21/03
SECTION: 2000 TIME LAST CHANGED: 13:57:09

REQUESTER: JSC
TEST CODE: LAUNCH MIL STSALL
TRACKING NO. F01-05-1 F02-08-6 F02-11-1 F106-1 F106-4
F308-3 F702-6 F803-3 F806-1

1. DESCRIPTION: MIL/PDL/WLP LAUNCH CONFIGURATION
(THROUGHPUT MODE)

In the launch configuration, GSFC is required to receive from JSC on a NISN circuit forward link serially clear or encrypted digitized voice and command data. The data will be received by GSFC at 32kbps or 72 kbps rate and routed to MIL, and WLP only 72 kb/s data will be routed to PDL. MIL, and WLP are required to receive and transmit HDR/LDR forward and return link data. PDL is required to receive and transmit HDR forward and return link data. MIL is required to provide forward link station decryption (if applicable) and voice monitor capability.

MIL and WLP are required to receive 96 kb/s or 192 kb/s S-band downlink encrypted or unencrypted digital voice and telemetry data. Forward 96 kb/s or 192 kb/s voice and data in 4800-bit NASCOM format to GSFC for transmittal to JSC. PDL is required to receive 192 kb/s voice and data only. The MIL or PDL best source is to be forwarded to GSFC for transmittal to JSC.

MIL is required to use best source selection (MIL & PDL) for OD

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 280883
ITEM NUMBER: T8GK

downlink and to provide processing status messages to JSC.
The format for the status message will be defined in the JSC/GSFC ICD.

In the NASA launch configuration, MIL is required to receive via
hard line circuit LCC/CCMS PCM H/L 128kb/s or 64kb/s data from the
KSC Firing Room, and transmit to MCC via GSFC.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/399 GSFC450.3 GSFC542
MIL PDL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03
RESPONSE TRACKING: ZF02-09-2

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: I-PZ-B2 USK-607 ZFR5103
ZFR8303 ZFR9002 ZFR9501
ZR4302 ZRR4301

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 11/04/02

[PRD] DATABASE RECORD: 345769 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 09/01/83
INITIAL DATE: 09/01/83
ITEM NUMBER: T17G DATE LAST CHANGED: 03/12/04
SECTION: 2000 TIME LAST CHANGED: 09:24:57

REQUESTER: JSC
TEST CODE: ALPHSE STSALL

1. DESCRIPTION: JSC/DSMC CONTROL INTERFACES

A JSC/DSMC interface is required for transmission of scheduling and
ground control messages from JSC and receipt of status messages from
DSMC. The DSMC delay on JSC-originated ground control messages shall
normally not exceed two seconds, with a worst case delay of four
seconds.

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 345769
ITEM NUMBER: T17G

SUBSUPPLIER: GSFC/534

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/24/84

[PRD] DATABASE RECORD: 347794 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/17/98
INITIAL DATE: 01/04/90
ITEM NUMBER: KT18GSX DATE LAST CHANGED: 11/19/02
SECTION: 2000 TIME LAST CHANGED: 15:53:26

REQUESTER: KSC JSC
SUBREQUESTER: PK-F3
TEST CODE: ALPHSE EAFB KSC STSALL

TRACKING NO. F008-1 F106-4 F301-1 F308-3 F401-2
F405-6 F801-3 F803-3 FSRR5101 FSRR8901

1. DESCRIPTION: COMMUNICATIONS SECURITY REQUIREMENTS

Communications security requirements during Shuttle operational flights will be met by the Orbiter limiting command acceptance to periods that provide direct line-of-sight communications with specific GN sites or the SN. The Orbiter S-Band uplink (CMD/Voice) will be operated in the encrypted mode with Command authentication. The downlink (TLM) normally will be in the clear mode. All GN stations (MIL, PDL, WLP, DFRC, and RTS are required to have the capability to support throughput of encrypted Orbiter CMD and clear TLM data streams. The MIL, PDL, WLP, DFRC & RTS are also required to have the capability to support throughput of encrypted Orbiter TLM data streams. In addition, MIL is required to have the capability to decrypt Orbiter TLM/CMD data streams to support data monitoring. Encryption and decryption capability is also required at the WSC interface to process unclassified data from the Orbiter forward and return links.

KSC Contact: B. R. Baker/PK-F3/407 861-3738

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/399 GSFC/427 GSFC/463

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 347794
ITEM NUMBER: KT18GSX

GSFC/530 MIL WSC

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/17/98
RESPONSE:

SUPPLIER: 21 SOPS AGENCY: 21 SOPS (21 SPACE OPERATIONS SQUADRON (21 S)
SUBSUPPLIER: 21SOPS

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/17/98

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/28/98

[PRD] DATABASE RECORD: 357742 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/27/92
INITIAL DATE: 06/17/91
ITEM NUMBER: T19EG DATE LAST CHANGED: 11/19/02
SECTION: 2000 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: ALPHSE MK98 STSALL
TRACKING NO. F106-4

1. DESCRIPTION: SPECIAL HANDLING REQUIREMENTS

For flights, premission acquisition data, in the form of a JSC Common Format Data Tape (D-Tape) will be provided GSFC and ER to generate prelaunch acquisition data. Mission voice coordination and real-time acquisition data does not require COMSEC handling or processing.

RATIONALE: Mandatory - Provide pre-launch tracking plan.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 357742
ITEM NUMBER: T19EG

SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO

RESPONSE DATE: 01/27/92

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/27/92

[PRD] DATABASE RECORD: 14584 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/06/97
INITIAL DATE: 05/29/91
ITEM NUMBER: T20EGKTX DATE LAST CHANGED: 08/03/04
SECTION: 2000 TIME LAST CHANGED: 11:16:38

REQUESTER: JSC
TEST CODE: ALPHSE DDMS EMCC EORBIT
EOTERY LANDNG RENTRY
TRACKING NO. F008-4 F105-11 F207-4 F301-10 F610-3
F705-1

1. DESCRIPTION: EMERGENCY MISSION CONTROL CENTER

An Emergency Mission Control Center (EMCC) capability is required at the LCC at KSC in the event of an MCC outage during Shuttle On-orbit Operations. The two-way communications with the Orbiter may be carried out either in encrypted or non-encrypted mode. EMCC capability will be required until such time as onboard navigation and deorbit targeting capabilities are operationally available. Prior notification will be given before EMCC activation and once activated, EMCC operations could extend until a safe re-entry and landing of the Shuttle or until control

is given back to JSC.

1. EMCC Facility

- a. Provide facilities and console space for 17 JSC Flight Controllers (5 firing room consoles).
Ref: T1K FLS3020 DBR 520264
T1.1EK FLS3020 DBR 520265

CLASSIFICATION UNCLASSIFIED

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PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 14584
ITEM NUMBER: T20EGKTX

- b. Provide space at the CAPE weather station (location at CCAS) for a JSC weather representative, with the capability to dial into the ER MIDDS via analog line.
Ref: T1E FLS3200 DBR 520568
- c. Provide GMT, MET and event time displays located within the EMCC.
Ref: T1K FLS2413 DBR 520222
- d. Provide facility to support two HP9000 computers with the following power requirements: four 110 volts AC, 20 amp circuits with two sets of standard dual outlets for each circuit for a total of 16 outlets. Inclusion with the existing UPS is desirable but not mandatory.
Ref: T1K FLS5320 DBR 520246
- e. Provide the facility to support one GRID lap top computer.
Ref: T1K FLS5320 DBR 520246
- f. Provide real-time support personnel to train EMCC personnel in EMCC console operations (DMON, communication equipment etc.)
Ref: T1K FLS3440 DBR 520239

2. EMCC Communications

- a. Provide SN, GN and DSN two-way voice from the EMCC to the Orbiter.
Ref: T25G FLS2300 DBR 520224
T19GX FLS2710 DBR 520230
T47G FLS2200 DBR 520225
- b. Provide facsimile equipment to communicate with support facilities.
Ref: T1K FLS2757 DBR 520240
- c. Provide telephones at EMCC consoles.

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 14584
ITEM NUMBER: T20EGKTX

Ref: T1K FLS2770 DBR 520247

d. Provide forward link (voice and CMD) to the Orbiter.

Ref: T25G FLS2300 DBR 520224

e. Provide return link (voice and TLM) from the Orbiter to the EMCC.

Ref: T52G FLS2200 DBR 520225

TK51GK FLS2200 DBR 520236

f. Provide headsets for 18 EMCC personnel and the JSC weather representative.

Ref: T33EK FLS2700 DBR 520242

g. Record all EMCC voice and data communications.

Ref: T1K FLS2760 DBR 520250

3. SECURITY (KSC)

a. Provide proper badging for EMCC Flight Controllers and access to the EMCC upon arrival at KSC.

Ref: T1K FLS5314 DBR 520220

b. Insure only authorized personnel have access to the EMCC during operations.

Ref: T1K FLS5314 DBR 520220

4. EMCC SUPPORT FACILITIES (GSFC)

a. Process C-BAND radar data and output to the EMCC the ground derived Orbiter state vector.

Ref: T89G FLS2100 DBR 520223

b. Facsimile equipment.

c. Provide voice loops between KSC and WSC, GN stations, and DSC stations.

Ref: T14EGKX FLS2730 DBR 520260

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PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 14584
ITEM NUMBER: T20EGKTX

5. TRANSPORTATION

- a. JSC will provide a KC135 for transportation of EMCC personnel to and from the KSC.
Ref: T1KT FLS5200 DBR 520228
- b. KSC will provide, upon request, ground transportation for 18 personnel and two computers from the SLF to the EMCC and for one person to the CAPE weather facility at ROCC/CCAS.
Ref: T1KT FLS5200 DBR 520228
- c. KSC will provide ground support equipment (forklift and operator) for aircraft unloading at the SLF.
Ref: T1K FLS5351 DBR 520227
- d. KSC will provide, upon request, transportation for 19 personnel to/from local lodging, and assist JSC Travel by arranging for lodging and rental cars.
Ref: T1KT FLS5200 DBR 520228
T1KT FLS5300 DBR 520233

NOTE: In the event of partial activation of the EMCC, the EMCC Flight Controllers require monitor on the following loops:

Flight Director	DDMS COORD
A/G1	TRACK COORD
A/G2	LANDING FIELD PRIME 1
A/G UHF	LANDING FIELD PRIME 2
GC/NOM	
SITE/TN COORD	

In addition the EMCC Flight Director will require TLM on Flight Director loop.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: INFO

RESPONSE DATE: 05/06/97

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 14584
ITEM NUMBER: T20EGKTX

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/542

SUPPLIER COMMITMENT: INFO RESPONSE DATE: 05/06/97

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: BOC-025 BOC-323 BOC-347
CSR4540 FF-S2-D KICS-109
LPS PH-B PK-D2
PZ-B2 RPS USK-068

SUPPLIER COMMITMENT: INFO RESPONSE DATE: 05/06/97

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: INFO RESPONSE DATE: 05/06/97

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: INFO RESPONSE DATE: 05/06/97

[PRD] DATABASE RECORD: 391242 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/14/03
INITIAL DATE: 03/23/88
ITEM NUMBER: T22DGK DATE LAST CHANGED: 01/20/04
SECTION: 2000 TIME LAST CHANGED: 10:16:54

REQUESTER: JSC
SUBREQUESTER: JSC/MT3
TEST CODE: DDMS STSALL TAL
TRACKING NO. F03-06-3 F106-3 F108-1 F411-2

1. DESCRIPTION: TRANSOCEANIC ABORT LANDING (TAL) SUPPORT

In support of Shuttle flights, the following sites are required to be on an immediate response status at Orbiter launch to support a Transoceanic Abort Landing (TAL). During this time these sites are Augmented Landing Sites (ALS). After TAL opportunity ends, all

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 391242
ITEM NUMBER: T22DGK

the sites become Emergency Landing Sites (ELS).

1. Ben Guerir, Morocco
2. Moron AB, Spain
3. Zaragoza AB, Spain (High Inclination launch)

REF: FLS 3350, ITEM T9D, DBR 010585

SUPPLIER: DDMS AGENCY: DDMS/X (DEPARTMENT OF DEFENSE)
RESPONDER: 321 494-2143

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/08/03

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/157 GSFC/530/542

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 12/16/03
RESPONSE: NISN will provide circuits from/to Southbury (IMMARSAT
Earth Station) to interface TAL Sites with JSC and KSC.

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: PZ-A3

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 11/14/03
RESPONSE TRACKING: ZR4303 ZR4801

[PRD] DATABASE RECORD: 393846 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/04/02
INITIAL DATE: 03/23/88
ITEM NUMBER: T23EGKX DATE LAST CHANGED: 07/30/04
SECTION: 2000 TIME LAST CHANGED: 14:27:44

REQUESTER: JSC
SUBREQUESTER: JSC/DM
TEST CODE: EAFB ER LANDNG MK98
STSALL WSSH
TRACKING NO. F02-08-6 F712-2 F903-2

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 393846
ITEM NUMBER: T23EGKX

1. DESCRIPTION: LANDING SITE S-BAND/C-BAND/UHF SUPPORT PERIODS

When specifically scheduled, in support of landing, S-band/C-band/UHF support periods at planned landing areas are as follows:

1. Edwards AFB & DFRC - After interfacing with the MCC during the launch terminal count, the UHF/C-Band/S-BAND ground data systems in support of an EAFB landing will remain as follows:
 - a. Dedicated for support until landing or end of AOA landing opportunity if EAFB is the AOA site.
 - b. Operating and available for landing support from end of AOA landing opportunity until touchdown minus three hours of the last day 1 deorbit burn opportunity; or until Orbiter landing if deorbit burn did occur.
 - c. Dedicated for support in accordance with the Landing Support Count for the scheduled EOM landing.

NOTE: Unless specifically scheduled by the MCC for AOA support, S-Band/C-Band/UHF support will be provided on a best effort basis.

2. WSSH - If WSSH becomes the scheduled AOA or EOM landing site, then UHF/C-band support will be required on the same basis as specified for EAFB. The criticality of the requirement for WSSH UHF/C-band support is such that participation is not required unless specifically scheduled by the MCC.
3. Kennedy Space Center - After interfacing with the MCC during the launch terminal count, the S-Band/C-Band/UHF ground data systems in support of a possible RTLS landing at KSC will remain dedicated through the RTLS capability period, and through the end of AOA landing opportunity, if KSC is the AOA site. KSC will be dedicated for support in accordance with the Landing Support Count for scheduled EOM landing.

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 393846
ITEM NUMBER: T23EGKX

RATIONALE: Required - Defines S-band/C-band/UHF support periods for
Edwards, and KSC landings. C-band/UHF support
periods for WSSH.

*Mandatory - Requirement becomes mandatory for loss of IMU
or NAVAID.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: EAFB ER WR
WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/16/03

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC450.3 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03

SUPPLIER: KSC AGENCY: PH-B ()
SUBSUPPLIER: PZ-L

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 11/04/02
RESPONSE TRACKING: ZFR9503 ZR9601

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/30/04

[PRD] DATABASE RECORD: 9560 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/04/02
INITIAL DATE: 02/05/90
ITEM NUMBER: T36GX DATE LAST CHANGED: 07/30/04
SECTION: 2000 TIME LAST CHANGED: 14:28:35

REQUESTER: JSC
SUBREQUESTER: JSC/DF2
TEST CODE: LANDNG POSFLT RENTRY
TRACKING NO. F02-11-1

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 9560
ITEM NUMBER: T36GX

1. DESCRIPTION: DFRC COMMAND UPLINK

JSC requires S-band uplink at DFRC for the purpose of providing entry and post-landing voice and command capability to/from MCC. Command capability will enhance the dumping of entry data from the Operations Recorders/SSR.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/501

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/30/04

[PRD] DATABASE RECORD: 10305 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/03/98
INITIAL DATE: 03/23/88
ITEM NUMBER: G37GSX DATE LAST CHANGED: 11/19/02
SECTION: 2000 TIME LAST CHANGED: 15:53:24

REQUESTER: GSFC
TEST CODE: 21 SOPS EAFB PREFLT STSALL

TRACKING NO. F301-1 F406-2 F804-1 GSFC/533

1. DESCRIPTION: PREFLIGHT VERIFICATION SUPPORT
(GN/SN/DFRC/21SOPS)

Prior to mission support, each station is required to support command, telemetry, metric data, verification where the following cases or conditions apply:

1. Significant hardware, software or configuration changes have occurred (including communications links with the stations).
2. Support requirement changes or unique payload requirements exist.

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 10305
ITEM NUMBER: G37GSX

3. Missions are separated by an extensive period of time.

These tests are documented in STDN No. 508.26, Verification Test manual, and will be scheduled prior to the JSC validation testing.

NOTE: MIL is required to support TV verification testing with GSFC in parallel with JSC validation testing in accordance with the guidelines documented in the JSC Validation Testing Manual.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/533 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

SUPPLIER: 21 SOPS AGENCY: 501/5 SOPS ()
SUBSUPPLIER: 21SOPS

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

[PRD] DATABASE RECORD: 22338 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 10/22/01
INITIAL DATE: 06/05/90
ITEM NUMBER: GS41GT DATE LAST CHANGED: 09/03/02
SECTION: 2000 TIME LAST CHANGED: 09:12:43

REQUESTER: GSFC 21 SOPS
SUBREQUESTER: 21SOPS GSFC/501
TEST CODE: ALPHSE STSALL
TRACKING NO. F006-1 F01-10-1 F707-5

1. DESCRIPTION: CUSTOMER ANCILLARY SERVICE/TRAJECTORY DATA

21 SOPS requires JSC via GSFC to provide Customer Ancillary Service (CAS) and Trajectory services for all Shuttle Mission

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 22338
ITEM NUMBER: GS41GT

TECHNICAL CONTACT: 21 SOPS/DO 408-752-4086

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/22/01

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 10/22/01

RESPONSE: In event of loss of services, restoration will be provided
on a non-interference basis with mission support.

[PRD] DATABASE RECORD: 22695 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 10/08/90
INITIAL DATE: 07/18/90
ITEM NUMBER: GS42G DATE LAST CHANGED: 11/22/02
SECTION: 2000 TIME LAST CHANGED: 15:23:27

REQUESTER: GSFC 21 SOPS
SUBREQUESTER: 21SOPS
TEST CODE: PREFLT LAEORY LANDNG PREFLT
STSALL
TRACKING NO. F007-1

1. DESCRIPTION: RTS NETWORK SUPPORT REQUIREMENTS

GSFC is required to provide 21st SOPS/RTS Network Support Requirements
in accordance with the following schedule:

Modification Req'd to AFSCN	36 Months
Multiple Payload Support	18 Months
Single Payload Support	12 Months
Shuttle Orbiter-Only Support	3 Months

RTS Network Support Requirements to be addressed to:

50SW/XP Randy Wagner (randy.wagner@shriever.af.mil)

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 22695
ITEM NUMBER: GS42G

cc: 21SOPS/DOO FAX NO: (719) 567-6551
22SOPS/DOO Brian Bayless (brian.bayless@shriever.af.mil) FAX NO: (408) 752-3175
FAX NO: (719) 567-3264

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/08/90

[PRD] DATABASE RECORD: 520128 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/03/92
INITIAL DATE: 06/03/92
ITEM NUMBER: T45GZ DATE LAST CHANGED: 11/19/02
SECTION: 2000 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
SUBREQUESTER: JSC/DB
TEST CODE: STSALL TDRSS
TRACKING NO. F206-1

1. DESCRIPTION: SPACE NETWORK CONFIGURATION TEST

THE SN IS TO PROVIDE END-TO-END TEST SERVICES FROM THE WHITE SANDS
COMPLEX (WSC) TO THE MCC FOR SHUTTLE AND SHUTTLE PAYLOAD DATA
RATES, INCLUDING THE ABILITY TO INJECT TAPE DATA SERVICES AT WSC.

REF: L&L Section 2000 Item T22G DBR 520018

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/09/92

SUPPLIER: WSTF AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/17/92

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 522722 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/10/93
INITIAL DATE: 05/10/93
ITEM NUMBER: T46G DATE LAST CHANGED: 11/19/02
SECTION: 2000 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: ALPHSE STSALL

1. DESCRIPTION: WSC I/Q CHANNEL REVERSALS

The WSC is to provide the capability to identify and correct for
K-Band I/Q channel reversals.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/24/93

[PRD] DATABASE RECORD: 522723 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/10/93
INITIAL DATE: 03/25/93
ITEM NUMBER: T47G DATE LAST CHANGED: 11/19/02
SECTION: 2000 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: ALPHSE STSALL

1. DESCRIPTION: WSC K-BAND CHANNELS 1, 2, AND 3 RECONFIGURATION

The WSC is required to allow for independent reconfiguration of Shuttle
K-Band channels 1, 2, and 3 without effecting service to any other
channel.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/25/93

[PRD] DATABASE RECORD: 530417 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/13/95
INITIAL DATE: 06/13/95
ITEM NUMBER: GT48GT DATE LAST CHANGED: 12/18/02
SECTION: 2000 TIME LAST CHANGED: 11:32:23

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 530417
ITEM NUMBER: GT48GT

REQUESTER: GSFC JSC
TEST CODE: EORBIT KSC LAUNCH PREFLT
STSALL
TRACKING NO. F506-4

1. DESCRIPTION: TDRSS VERIFICATION/VALIDATION TEST SUPPORT

The TDRSS and MCC/ESTL are required to support combined GSFC verification/JSC validation testing. This testing will utilize the JSC ESTL to emulate the Space Shuttle Orbiter, providing both S-Band and Ku-Band Telemetry data, including payload data as well as command forward link system. The MCC and the TDRSS shall be in mission support configuration. This testing will confirm the end-to-end data transmission systems. System status (UPD/DQM) and control (GCMR/GCM) will also be evaluated to ensure true status is accurately reflected.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/20/95

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/16/95

[PRD] DATABASE RECORD: 530426 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/13/95
INITIAL DATE: 06/13/95
ITEM NUMBER: HT49G DATE LAST CHANGED: 11/19/02
SECTION: 2000 TIME LAST CHANGED: 15:53:26

REQUESTER: MSFC JSC
TEST CODE: LATROT STSALL
TRACKING NO. F506-4

1. DESCRIPTION: SN UPS/DQM REQUIREMENTS

The SN is required to have the capability of transmitting UPD/DQM information in 4800 bit NASCOM blocks of non-secure data receive for all forward and return links to the MCC, and HOSC. The UPD/DQM is a once per 5 second message (per vehicle) containing forward

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2000 - TEST REQUIREMENTS/SUPPORT PLANS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 530426
ITEM NUMBER: HT49G

and return links status of the WSC.

Reference JSC/GSFC ICD JSC No. 11534 for details and related
information.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/20/95

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 325787 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 08/22/01
INITIAL DATE: 02/05/90
ITEM NUMBER: T1G DATE LAST CHANGED: 12/05/02
SECTION: 2100 TIME LAST CHANGED: 14:49:07

REQUESTER: JSC
TEST CODE: LANDNG LAUNCH STSALL
TRACKING NO. F01-08-1 F401-2
PRIORITY: REQUIRED
RATIONALE: Receipt of the data at JSC must not be more than two
second after the time tag of data in support.*
*Mandatory - HSR requirement becomes mandatory for loss IMU
or NAVAID redundancy.

1. DESCRIPTION: S-BAND HIGH SAMPLE RATE REQUIREMENTS

MILA s-band station supporting launch and landing is required to
provide time, range, angle and Doppler data in the UTDF format at
ten samples per second transmitted to JSC on the WBD circuit.
The delay between the time tag of the high sample rate data and
time of receipt of the data point at JSC must not be more than two
seconds. High sample rate data be time-tagged in even tenth of a
second increments (00.00, 00.10.00.20 etc.)

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3467

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/22/01
RESPONSE:

RESPONSE TRACKING: GSFC/427 GSFC/530

[PRD] DATABASE RECORD: 346045 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/17/98
INITIAL DATE: 02/05/90
ITEM NUMBER: T2G DATE LAST CHANGED: 12/05/02
SECTION: 2100 TIME LAST CHANGED: 15:20:57

REQUESTER: JSC
SUBREQUESTER: JSC/DM
TEST CODE: 30 SPW LANDNG LAUNCH STSALL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 346045
ITEM NUMBER: T2G

TRACKING NO. F302-2 F308-3 F403-3 F712-2 F801-1
F803-3
PRIORITY: REQUIRED
RATIONALE: Maintain angle bias in support of SSO Flight rules.

1. DESCRIPTION: S-BAND ANGLE BIAS ACCURACY REQUIREMENTS

The following S-band antennas are required to maintain angle bias accuracy within 0.05 degrees (1 sigma) in X axis and 0.05 degrees (1 sigma) in Y axis in support of the Shuttle launch/landing ground trajectory processor for onboard navigation monitoring/navigation update: (MIL 9 meter antenna).

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC450.3 GSFC453.2 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/17/98
RESPONSE TRACKING: GSFC/399

[PRD] DATABASE RECORD: 350661 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 01/12/87
INITIAL DATE: 01/12/87
ITEM NUMBER: T3G DATE LAST CHANGED: 12/05/02
SECTION: 2100 TIME LAST CHANGED: 15:22:53

REQUESTER: JSC
TEST CODE: LATROT STSALL
PRIORITY: REQUIRED
RATIONALE: Describes JSC requirement of S-Band.

1. DESCRIPTION: S-BAND ANTENNA REQUIREMENTS

MILA S-Band station may support with either antenna in the JSC characteristics tables provided that both antenna systems satisfy signal margin requirements for the requested support.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 350661
ITEM NUMBER: T3G

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/26/87

[PRD] DATABASE RECORD: 349932 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/21/94
INITIAL DATE: 03/24/88
ITEM NUMBER: T5G DATE LAST CHANGED: 12/05/02
SECTION: 2100 TIME LAST CHANGED: 15:24:59

REQUESTER: JSC
TEST CODE: EORBIT LAEORY LAUNCH RENTRY
STSALL
TRACKING NO. F008-1 F301-1 F401-2
PRIORITY: REQUIRED
RATIONALE: Required data in the UTDF format one sample per ten
seconds transmitted to JSC.

1. DESCRIPTION: S-BAND LOW SAMPLE RATE REQUIREMENTS

All metric S-Band stations, (except PDL and DFRC) are required to
provide time, range, angle and Doppler data in the UTDF format
of one sample per ten seconds transmitted to JSC on the WBD circuit.
The delay between the time tag of the low sample rate data point
and receipt of the data point at JSC must not be more than ten
seconds. Low sample rate data shall be time-tagged in even ten
second increments (00.0, 10.0, 20.0, etc.).

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: DSN GSFC/530/553 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/01/94

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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 [PRD] DATABASE RECORD: 180075 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 03/17/98
 INITIAL DATE: 02/05/90
 ITEM NUMBER: T6G DATE LAST CHANGED: 12/05/02
 SECTION: 2100 TIME LAST CHANGED: 15:27:06

REQUESTER: JSC
 TEST CODE: LATROT STSALL
 TRACKING NO. F02-12-1 F301-1 F803-3
 PRIORITY: REQUIRED
 RATIONALE: Required S-Band stations are required to record raw tracking data.

1. DESCRIPTION: S-BAND RECORD/PB REQUIREMENTS

S-band stations are required to record raw tracking data for possible JSC requested playback. Stations are required to retain a copy of all recorded data until released by MCC, or until the end of the mission. If playback becomes necessary, JSC's request will come within two hours post-pass. Station response to the request should be within one hour of request; except during critical mission phases, which require immediate response. Stations are required to play back specific time periods as will be specified by JSC at the time of playback request. HSR UTDF playbacks are required for testing and anomaly investigation if HSR data are not received in real-time during mission support from MIL.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
 SUBSUPPLIER: GSFC/514 GSFC450.3 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/17/98

 [PRD] DATABASE RECORD: 217820 REQUIREMENT STATUS: APPROVED
 DOCUMENT ID: FLT-I APPROVAL DATE: 03/24/88
 INITIAL DATE: 03/24/88
 ITEM NUMBER: T7G DATE LAST CHANGED: 12/18/02
 SECTION: 2100 TIME LAST CHANGED: 11:52:03

REQUESTER: JSC
 TEST CODE: LATROT STSALL
 TRACKING NO. F008-1 F12-05-1

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 217820
ITEM NUMBER: T7G

PRIORITY: REQUIRED
RATIONALE: A single VID/SIC combination is to be used for each
vehicle for each flight for routing purposes.

1. DESCRIPTION: S-BAND FORMAT REQUIREMENTS

Tracking data formats for S-band data for low and high sample rates and acquisition data provide for use of Vehicle Identification codes (VID's) and Support Identification Codes (SIC's). GSFC is required to define and provide JSC with specific codes to be used for each vehicle/flight. A single VID/SIC combination is to be used for each vehicle for each flight based upon JSC's requested codes which are driven by the MCC OPS software.

Reference ICD No. JSC-11534 for tracking data formatting requirements.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/24/88

[PRD] DATABASE RECORD: 336204 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 09/01/83
INITIAL DATE: 09/01/83
ITEM NUMBER: T8G DATE LAST CHANGED: 12/05/02
SECTION: 2100 TIME LAST CHANGED: 15:33:12

REQUESTER: JSC
TEST CODE: LATROT STSALL
TRACKING NO. F02-12-1
PRIORITY: REQUIRED
RATIONALE: Tracking data formatting requirement are to be the same.

1. DESCRIPTION: S-BAND FORMAT REQUIREMENTS

All S-Band data transmitted to JSC via the WBD circuit interface(s)

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 336204
ITEM NUMBER: T8G

will be in the same universal format, and will require no
manipulation of data fields or bytes for different data types.
data types.

Reference ICD No. JSC-11534 Vol. I for tracking data formatting
requirements.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/24/84

[PRD] DATABASE RECORD: 284058 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 09/03/02
INITIAL DATE: 02/05/90
ITEM NUMBER: T10EGX DATE LAST CHANGED: 12/17/03
SECTION: 2100 TIME LAST CHANGED: 13:21:15

REQUESTER: JSC
TEST CODE: 30 SPW EAFB ER LATROT
MK98 STSALL WSSH
TRACKING NO. F008-1 F02-12-1
PRIORITY: MANDATORY
RATIONALE: Capability to track, transmit, record and playback
tracking data.

1. DESCRIPTION: C-BAND REQUIREMENTS

C-band stations are required to skin or beacon track the SSO and/or
other targets, remote the data, and record the raw data for JSC
playback requests. Each station is required to retain a copy of all
recorded data for 30 days unless otherwise requested by MCC.

NOTE: DFRC does not provide beacon tracking.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 284058
ITEM NUMBER: T10EGX

SUBSUPPLIER: EAFB ER WR
WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/16/03

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/514 GSFC/530

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03
RESPONSE:

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/03/02

[PRD] DATABASE RECORD: 309652 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 03/24/88
INITIAL DATE: 03/24/88
ITEM NUMBER: T12EGX DATE LAST CHANGED: 12/05/02
SECTION: 2100 TIME LAST CHANGED: 15:43:12

REQUESTER: JSC
TEST CODE: ER LANDNG LAUNCH MK98
STSALL

TRACKING NO. F008-1 F02-12-1

PRIORITY: REQUIRED

RATIONALE: Requirement on the ER ROCC for selector of high speed
C-Band tracking data sources for support of launch and
landing.

1. DESCRIPTION: BEST SOURCE SELECTION REQUIREMENTS

The selection of the source(s) of data for launch/landing high sample
rate data is defined as:

1. Best Source (Smooth): Trajectory source with the smallest
Instantaneous Impact Point (IIP) error ellipse. All sources

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 309652
ITEM NUMBER: T12EGX

considered; including GN S-band, vehicle guidance data,
and C-band radars. Applicable to the 2.4 kb/s output to
GSFC/GN.

- *2. Limited Best Source (Smooth): Data shall be all zero fill.
- *3. Limited Best Source (Raw): Acceptable trajectory source with
the smallest IIP error ellipse during ascent and RTLS, and
smallest present position (pp) error ellipse during entry;
only C-band radars are considered. Applicable to the
7.2 kb/s output to JSC.
- *4. Limited Second Best Source (Raw): Acceptable trajectory
source with the smallest IIP error during ascent and RTLS,
and smallest present position (PP) error ellipse during
entry; only C-band radars are considered. Applicable to the
7.2 kb/s output to JSC.

*NOTE: During the first 60 seconds of launch, the Contraves
multiple-station optical tracking solution is required to be
included in Best Source (Smooth), Limited Best and Second Best
Sources (RAW) outputs to JSC under the same source selection
criteria as that used for selecting the Contraves solution for
range safety use. After the first 45 seconds, the Contraves
source is to be down weighted relative to all other on track
sources for JSC output. Data will be pseudo-raw, time, range,
azimuth and elevation data referenced to the radar 1.4 point
origin. Format and units will be identical to C-Band radar
data output as these sources.

- 5. Logic for smoothing, editing, and error ellipse generation
shall be common to both range safety and JSC source
selection. Thereafter, the JSC source selection path shall
be independent and provide for unique source weighting
criteria. Although most of the logic will be standard range
safety, additional criteria shall be added so that:

- a. Sources shall be down weighted if elevation is less than

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

=====
CONTINUED

[PRD] DATABASE RECORD: 309652
ITEM NUMBER: T12EGX

3 degrees.

- b. Sources shall be down weighted if they fail a time correlation test.
- c. Sources shall be favored if certain geographical area criteria are met (JSC Geometric Considerations). A manual deselect shall be provided to allow this logic to be by-passed in real-time, if necessary.
- d. Limited Best Source (Raw) and Limited Second Best Source (Raw) sources shall not be changed unless a different source with an error at least 25% smaller is available.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/25/88

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/24/88
RESPONSE: CCC will make the source selection.

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/24/88

[PRD] DATABASE RECORD: 366245 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 07/08/91
INITIAL DATE: 07/08/91
ITEM NUMBER: T13EG DATE LAST CHANGED: 12/05/02

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 366245
ITEM NUMBER: T13EG

SECTION: 2100 TIME LAST CHANGED: 15:45:48

REQUESTER: JSC
TEST CODE: 30 SPW EAFB ER LATROT
MK98 STSALL WSSH
TRACKING NO. F008-1 F02-12-1 F106-4 F107-3
PRIORITY: REQUIRED
RATIONALE: For C-Band trackers to provide tracking summary within
LOS +30 minutes.

1. DESCRIPTION: C-BAND TRACKING SUMMARY MESSAGE REQUIREMENTS

All C-band stations are required to transmit Tracking Summary
Messages (TSM) to MCC within LOS + 30 minutes.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: EAFB ER KMR
WR WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/08/91

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/532

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/10/91

[PRD] DATABASE RECORD: 384117 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 12/12/97
INITIAL DATE: 03/24/88
ITEM NUMBER: T14EG DATE LAST CHANGED: 12/05/02
SECTION: 2100 TIME LAST CHANGED: 15:48:09

REQUESTER: JSC
SUBREQUESTER: JSC/DM
TEST CODE: LANDNG LAUNCH MK98 STSALL
TRACKING NO. F008-1 F02-12-1 F301-1 F712-2

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 384117
ITEM NUMBER: T14EG

PRIORITY: REQUIRED
RATIONALE: Format requirement of high-speed C-Band tracking data
provided via LLTDS data circuits.*
*Mandatory - Requirement becomes mandatory for loss of IMU
or NAVAID redundancy.

1. DESCRIPTION: C-BAND LLTDS REQUIREMENTS

ER is required to transmit trajectory data to JSC (via
the LLTDS) during launches and landings.

The data will consist of:

1. Four samples-per-second, data shall be all zero fill.
2. Ten samples-per-second, limited best source, C-band radar,
formatted output TAER;
3. Ten samples-per-second, limited second best source, C-band
radar, formatted output TAER.

The data will be transmitted on redundant 7.2 kb/s data circuits.
The delay between the time tag of the high sample rate data point
and the time of receipt of the data point at JSC must not be
more than 2 seconds.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/23/97

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/542/530 GSFC/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/22/97

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD:	395541	REQUIREMENT STATUS:	APPROVED
DOCUMENT ID:	FLT-I	APPROVAL DATE:	03/23/88
		INITIAL DATE:	03/23/88
ITEM NUMBER:	T15EG	DATE LAST CHANGED:	12/05/02
SECTION:	2100	TIME LAST CHANGED:	16:01:11

REQUESTER:	JSC			
TEST CODE:	ER	LATROT	MK98	STSALL

TRACKING NO. F008-1 F02-12-1
PRIORITY: MANDATORY
RATIONALE: Identification code for routing of on-orbit C-Band tracking data.

1. DESCRIPTION: C-BAND FORMAT REQUIREMENTS

Tracking data formats for C-band data for low sample rates data provide for use of Vehicle Identification Codes (VID's) and Support Identification Codes (SIC's). GSFC is required to define and provide JSC with specific codes to be used for each vehicle flight. A single VID/SIC combination is to be used for each vehicle for each flight based upon JSC's requested codes which are driven by the MCC OPS software.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER	AGENCY: 45 RANS/DOS	(E - 45TH SPACE WING)
SUBSUPPLIER: ER	KMR	WR	

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/24/88

SUPPLIER: GSFC	AGENCY: GSFC/451	(GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER:	GSFC/530/553		

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/24/88

[PRD] DATABASE RECORD:	399502	REQUIREMENT STATUS:	APPROVED
DOCUMENT ID:	FLT-I	APPROVAL DATE:	08/27/90
		INITIAL DATE:	08/27/90
ITEM NUMBER:	T16EG	DATE LAST CHANGED:	12/06/02
SECTION:	2100	TIME LAST CHANGED:	10:13:06

REQUESTER:	JSC			
TEST CODE:	30 SPW	EAFB	ER	LANDNG

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 399502
ITEM NUMBER: T16EG

LAUNCH MK98 STSALL WSSH

TRACKING NO. F008-1 F02-12-1
PRIORITY: MANDATORY
RATIONALE: Tracking data time tag accuracy requirement.

1. DESCRIPTION: C-BAND LLTDS TIME TAG REQUIREMENTS

All radars providing HSR data to JSC via CCC are required to time tag data samples within plus or minus 50 microseconds of UTC.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/27/90

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/25/91

[PRD] DATABASE RECORD: 402586 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 03/24/88
INITIAL DATE: 03/24/88
ITEM NUMBER: T20EGX DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 10:23:39

REQUESTER: JSC
TEST CODE: 30 SPW EAFB ER LATROT
MK98 STSALL WSSH
TRACKING NO. F008-1 F02-12-1
PRIORITY: REQUIRED
RATIONALE: C-Band noise and bias by maintained within existing maintenance and calibration programs at the support ranges.

1. DESCRIPTION: C-BAND ANGLE, NOISE & BIAS REQUIREMENTS

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 402586
ITEM NUMBER: T20EGX

All radars providing HSR and/or LSR tracking data to JSC for Shuttle support are required to provide data with range and angle noise and bias performance consistent with inherent capabilities of each radar and the existing maintenance and calibration programs of the support ranges.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: EAFB ER KMR
WR WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/24/88

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/531

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/24/88

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/24/88

[PRD] DATABASE RECORD: 200398 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 10/01/01
INITIAL DATE: 06/20/88
ITEM NUMBER: T23EG DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 10:35:16

REQUESTER: JSC
SUBREQUESTER: JSC/DM
TEST CODE: ER LANDNG LAUNCH MK98
STSALL
TRACKING NO. A26-50 A26-84 F008-1 F01-10-1 F02-12-1
F211-2 F211-3 F211-6 F301-7 F408-6
F505-1 F712-2 F712-4 F806-1 F903-2
PRIORITY: REQUIRED
RATIONALE: Describes JSC preference of C-Band radars for KSC

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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CONTINUED

[PRD] DATABASE RECORD: 200398
ITEM NUMBER: T23EG

launches, including ET and SRB tracking.

1. DESCRIPTION: C-BAND ANTENNA PREFERENCE REQUIREMENTS

C-band support requirements and antenna preferences for KSC launches are as follows:

1. High Sample Rate (HSR) tracking data is required via the ER RTCS from four (4) of six (6) KSC area radars for real-time trajectory monitoring during vehicle ascent, including aborts. The available KSC area radars are preferred in the following orders:

- (1) MLAC (FPQ-14)
- (2) PATC (FPQ-14)
- (3) CMTC (MPS-39)
- (4) MLMC (MCB-17)
- (5) CNVC (FPS-16)
- (6) JDIC (FPQ-14)

The Contraves multistation optics tracking solution (CNOC) is also required to be in the ER/RTCS radar source selection table for the JSC LLTDS. CMTC will track both the Orbiter and the SRB's to LOS. For high inclination launches, two (2) of four (4) Wallops radars are required in the following order of preference:

- (1) WLPC (FPQ-6)
- (2) WLRC (FPS-16)
- (3) WLIC (FPS-16) (Island, 57 degree flight only)
- (4) WLMC (RIR-778)

These radars will participate in tests as scheduled in the six-week period prior to each Shuttle launch. Radar WLIC FPS-16 (Island) is only required for launches with the inclination of 57 degrees.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

2. In the case of failure of all three SSME's during launch, the following will be required:

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 200398
ITEM NUMBER: T23EG

a. Low Inclination

(1) MLAC will track the ET

b. High Inclination

- (1) WLPC will track the ET
- (2) WLRC will track the Orbiter
- (3) In the case of two radars failing, the first priority will be to track the Orbiter.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/19/02

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC450.3 WLP

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/01/01

[PRD] DATABASE RECORD: 339408 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 12/17/97
INITIAL DATE: 03/01/90
ITEM NUMBER: T27EG DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 10:47:28

REQUESTER: JSC
SUBREQUESTER: JSC/DM
TEST CODE: ER LANDNG MK98 STSALL
WSSH
TRACKING NO. F008-1 F02-12-1 F211-2 F211-3 F712-1
F712-2
PRIORITY: REQUIRED
RATIONALE: Tracking requirement for WSSH landings, and JSC
preference of C-Band radars for landings support.*
*Mandatory - Requirement becomes mandatory for loss of

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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CONTINUED

[PRD] DATABASE RECORD: 339408
ITEM NUMBER: T27EG

IMU of NAVAID redundancy.

1. DESCRIPTION: C-BAND LANDING REQUIREMENTS

WSSH Landings (HSR only)

1. WSMR radars are required to provide HSR tracking for real-time trajectory monitoring and SSO navigation updates. Data flow for WSSH will be via RTDS for transmission to the ER RTCS. The ER RTCS will select among the WSSH radars (and the west coast radars, radars, if available), and output the best and second best radars radars to the JSC/MCC on redundant lines.
2. High sample rate tracking support will normally be scheduled for nominal end-of-mission, but may be superceded by other resource conflicts. In the event of a declared SSO contingency affecting landing capability, best effort high sample rate tracking support shall be required from the ER RTCS and WSMR radars.

3. System Preference:

Tracking support shall normally be scheduled to provide continuous tracking from at least two (2) radars from initial acquisition to touchdown. Three (3) radars are preferred to ensure two (2) radars capability in case of a radars failure.

- a. WSSH: Support is desired from three (3) of four (4) radars for all landing azimuths.
The WSMR radar consist of:
 - (1) HOLC (FPS-16)
 - (2) WSSC (FPS-16)
 - (3) WHSC (FPS-16)
 - (4) WSMC (MOTR)

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER WSMR

SUPPLIER COMMITMENT: WILCO

RESPONSE DATE: 12/23/97

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 339408
ITEM NUMBER: T27EG

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/501

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/22/97

[PRD] DATABASE RECORD: 362043 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 02/19/99
INITIAL DATE: 02/05/90
ITEM NUMBER: T29EGX DATE LAST CHANGED: 12/20/02
SECTION: 2100 TIME LAST CHANGED: 10:41:29

REQUESTER: JSC
SUBREQUESTER: JSC/DM
TEST CODE: 30 SPW EORBIT ER MK98
STSALL WSSH
TRACKING NO. A26-84 F008-1 F02-12-1 F505-1 F707-2
F712-1 F806-1 F807-2 F903-2
PRIORITY: MANDATORY
RATIONALE: Tracking requirement for orbit operations, and JSC
preference of C-Band radars at each location.

1. DESCRIPTION: C-BAND REQUIREMENTS

Earth Orbital Operations (LSR only) - MLA, PAT, ANT, ASC, FRC, WLP, KMR, KPT, VDB, VDH, and PTP C-band radars are required for on-orbit tracking. C-band passes will be scheduled as necessary to augment the S-band solution. Redundant sites, such as MLA, and PAT on the same pass, will not be scheduled; but other passes on each orbit will be scheduled to provide orbiter ephemeris determination, rendezvous support and ephemeris perturbation evaluation.

1. One of the WLP C-band radars is required for on-orbit support in the following order of preference:

- a. FPQ-6,
- b. Runway FPS-16 or
- c. Island FPS-16.
- d. Mobile RIR-778

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 362043
ITEM NUMBER: T29EGX

2. Either the FPQ-19, ALTAIR, TRADEX or the ALCOR radar at USAKA is acceptable for on-orbit support.
3. Either the TPQ-18 or the FPQ-15 radar at ASC is acceptable for on-orbit support.
4. Either the TPQ-18 or the HAIR radar at VAFB is acceptable for on-orbit support.
5. Either RIR-716 radar at Dryden is acceptable for on-orbit support.

Earth Orbital Supplemental Support (LSR only) - C-band radars are requested for on-orbit support. C-band passes will be scheduled as necessary to supplement GN or SN tracking.

LSR data is provided at one sample-per-six seconds in the 46 character ASCII format. Data flow will be via GSFC to JSC on the 2.5 MB data circuit. GSFC will provide BAUDOT to ASCII conversion, if necessary. The delay between the time tag of the low sample rate data point and receipt of the data point at JSC must not exceed ten seconds. Low sample rate data shall be time tagged in even six second increments (eg., 00.0, 06.0, 12.0, etc.).

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER KMR WR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/19/99

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC450.3 GSFC453.2 WLP

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/11/99

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 362043
ITEM NUMBER: T29EGX

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/19/99

[PRD] DATABASE RECORD: 380901 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 12/06/02
INITIAL DATE: 01/28/91
ITEM NUMBER: T31EG DATE LAST CHANGED: 01/20/04
SECTION: 2100 TIME LAST CHANGED: 10:17:23

REQUESTER: JSC
TEST CODE: 30 SPW EAFB ER LATROT
MK98 STSALL WSSH
TRACKING NO. A26-65 A26-83 A27-02 F008-1 F01-10-1
F02-12-1 F101-5 F211-2 F301-6 F506-4
F802-3 F803-1 F806-1 F903-2
PRIORITY: MANDATORY
RATIONALE: Atmospheric correction configuration for each C-Band antenna.

1. DESCRIPTION: C-BAND REQUIREMENTS

The following C-band stations will transmit HSR and/or LSR tracking data corrected for atmospheric refraction:

Antigua	ANTC - FPQ-14	Merritt Island	MLMC-MCB-17
Ascension	ASCC - FPQ-15	Merritt Island	MLAC-FPQ-14
Ascension	ASTC - TPQ-18	Patrick AFB	PATC-FPQ-14
Cape Canaveral	CNVC - FPS-16	Kwajalein	KMRC-ALCOR
Merritt Island	MMTC - MPS-39	Kwajalein	KMLC-TRADEX
Kaena Point	KPTC - FPQ-14	Kwajalein	KMAC-ALTAIR
Pillar Point	PTPC - FPQ-6	Vandenberg	VDSC-FPS-16
Pillar Point	PPMC - MPS-36	Vandenberg	VDSC-TPQ-18
Dryden	FRCC - RIR-716	Vandenberg	VDMC-MPS-39
Dryden	FDRC - RID-716	Vandenberg	VDHC-HAIR
		WSMR	WSMC-MPS-39

The following C-band stations will transmit HSR and/or LSR tracking data not corrected for atmospheric refraction:

WSMR	WHSC - FPS-16	Wallops	WLPC-FPQ-6
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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 380901
ITEM NUMBER: T31EG

WSMR	HOLC - FPS-16	Wallops	WLPC-FPS-16
WSMR	WSSC - FPS-16	Wallops	WLMC-RIR-778

NOTE: Wallops WLIC FPS-16 is required for 57 degree inclination missions. The radar maybe placed in "care taker" status until a 57 degree mission is manifested.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER	AGENCY: 45 RANS/DOS	(E - 45TH SPACE WING)
SUBSUPPLIER:	EAFB	ER	KMR
	WR	WSMR	

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/16/03
RESPONSE:

SUPPLIER: GSFC	AGENCY: GSFC/451	(GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER:	GSFC450.3	GSFC453.2	WLP

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/16/03
RESPONSE TRACKING: Z103-2

[PRD] DATABASE RECORD:	220594	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	12/06/02
		INITIAL DATE:	02/05/90
ITEM NUMBER:	T32EG	DATE LAST CHANGED:	12/17/03
SECTION:	2100	TIME LAST CHANGED:	13:33:06

REQUESTER:	JSC			
TEST CODE:	30 SPW	EAFB	ER	LATROT
	MK98	STSALL	WSSH	
TRACKING NO.	F008-1	F02-12-1	F806-1	F807-2
PRIORITY:	REQUIRED			
RATIONALE:	Real-time atmospheric measurements from various sites in order to improve navigation accuracy.			

1. DESCRIPTION: C-BAND REFRACTIVITY REQUIREMENTS

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 220594
ITEM NUMBER: T32EG

The MCC metric data processing for launch and landing phases can be significantly improved by use of a current index of refractivity rather than the mean monthly index. In order to obtain a current index of refractivity, stations are required to provide local on-site readings of dry bulb temperatures, wet bulb temperatures and atmospheric pressures as follows:

1. Pre-launch - at one hour prior to scheduled lift-off (and at one hour intervals until lift-off has occurred) the following scheduled stations are required to provide the requested information:
 - a. MLA, and WLP for launch support,
2. Pre-landing - at one hour prior to de-orbit (and repeated if de-orbit is delayed) the following stations are required to provide the requested information:
 - a. HOL, WHS and WSS for WSSH landing support.
 - b. MLA for KSC landing support.
3. Real-time Reports - DOD COMM will fax to "DFE" (if time allows) or verbal message. Measurement units are to be those actual used at the measuring station. JSC understands these units are as follows:
 - a. Wet and dry bulb temperature; degrees Fahrenheit for all stations.
 - b. Atmospheric Pressure: millibars for all stations (except WSMR which use inches of mercury).
4. Post-pass Reports - All supporting sites are to provide the requested information post-pass in their Tracking Summary Messages (TSM's).

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 220594
ITEM NUMBER: T32EG

SUBSUPPLIER: EAFB ER WR
WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/16/03

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/534 WLP

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03

[PRD] DATABASE RECORD: 393133 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 09/01/83
INITIAL DATE: 09/01/83
ITEM NUMBER: T35G DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 11:46:19

REQUESTER: JSC
TEST CODE: EORBIT STSALL
TRACKING NO. F02-12-1
PRIORITY: MANDATORY
RATIONALE: TDRS data to be transmitted to JSC.

1. DESCRIPTION: TDRSS TRACKING DATA REQUIREMENTS

TDRSS derived tracking data types which are required to be
transmitted to JSC include coherent Doppler and bilateration
data.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/532

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/24/84

[PRD] DATABASE RECORD: 394565 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 03/25/88
INITIAL DATE: 03/25/88
ITEM NUMBER: T36G DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 11:48:38

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 394565
ITEM NUMBER: T36G

REQUESTER: JSC
TEST CODE: EORBIT STSALL
TRACKING NO. F02-12-1
PRIORITY: MANDATORY
RATIONALE: TDRS data to be transmitted to JSC.

1. DESCRIPTION: TDRSS TRACKING DATA REQUIREMENTS

Ground derived two-way Doppler data is obtained only from the S-band link. When the TDRSS is operating Ku-band, the S-band return may be operated simultaneously for this purpose.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/532

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/25/88

[PRD] DATABASE RECORD: 184793 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 01/12/87
INITIAL DATE: 01/12/87
ITEM NUMBER: T37G DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 11:51:04

REQUESTER: JSC
TEST CODE: LATROT STSALL
TRACKING NO. F02-12-1
PRIORITY: MANDATORY
RATIONALE: TDRS data to transmitted to JSC.

1. DESCRIPTION: TDRSS TRACKING DATA REQUIREMENTS

The WSC will be required to furnish JSC with two-way Doppler-only data. The data will be formatted in the UTDF (as specified in JSC-11534) at one sample-per-ten seconds and transmitted to JSC on the MDM circuit.
The delay between the time tag of the data point and receipt of that data point at JSC must not exceed ten seconds.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 184793
ITEM NUMBER: T37G

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/532

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/26/87

[PRD] DATABASE RECORD: 192737 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 09/01/83
INITIAL DATE: 09/01/83
ITEM NUMBER: T38G DATE LAST CHANGED: 12/20/02
SECTION: 2100 TIME LAST CHANGED: 10:59:55

REQUESTER: JSC
TEST CODE: ALPHSE STSALL
TRACKING NO. F02-12-1
PRIORITY: MANDATORY
RATIONALE: GSFC provides capability to receive JSC orbiter data.

1. DESCRIPTION: ORBITER ICV DATA REQUIREMENTS

GSFC is required to provide the capability to receive JSC generated
Orbiter position data from which TDRSS antenna positioning data can
be derived. The JSC/GSFC data will be in IIRV format via the MDM
circuit.

TECHNICAL CONTACT: CSOC/Trajectory Coordinator/281 853-2271

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/24/84

[PRD] DATABASE RECORD: 193955 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/08/95
INITIAL DATE: 02/05/90
ITEM NUMBER: T39G DATE LAST CHANGED: 11/19/02
SECTION: 2100 TIME LAST CHANGED: 15:53:25

REQUESTER: JSC
TEST CODE: ALPHSE STSALL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 193955
ITEM NUMBER: T39G

TRACKING NO. F506-2

1. DESCRIPTION: TDRSS ICV DATA REQUIREMENTS

GSFC is required to provide JSC with all the TDRS spacecraft
position data for Orbiter acquisition determination in the IIRV
format via the MDM circuit.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/20/95

[PRD] DATABASE RECORD: 397882 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/21/04
INITIAL DATE: 01/12/87
ITEM NUMBER: T39.6G DATE LAST CHANGED: 04/21/04
SECTION: 2100 TIME LAST CHANGED: 11:32:26

REQUESTER: JSC
SUBREQUESTER: JSC/DM
TEST CODE: ALPHSE STSALL
TRACKING NO. F02-12-1 F04-04-1 F712-1
PRIORITY: REQUIRED
RATIONALE: TDRS maneuvers are restricted w.r.t. trajectory
critical shuttle periods.

1. DESCRIPTION: TDRS STATION KEEPING

TWO TDRS OPERATION:

JSC requests that the GSFC/SN adhere to the following guidelines
for scheduling TDRS station keeping maneuvers during any given
Shuttle flight:

- a. An E/W TDRS maneuver will not be scheduled within 2 hours of a
Shuttle critical period as defined by JSC. The JSC Navigational
Critical periods are defined below:

1. Launch phase

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 397882
ITEM NUMBER: T39.6G

2. Rendezvous phase
3. Deorbit and Landing phase
4. Other periods as defined by JSC NAV.

If a TDRS maneuver is required by WSC during a designated JSC NAV critical period, as alternate TDRS satellite will be provided for mission support.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/532 GSFC/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/21/04

[PRD] DATABASE RECORD: 195931 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 09/01/83
INITIAL DATE: 09/01/83
ITEM NUMBER: T40G DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 11:57:40

REQUESTER: JSC
TEST CODE: ALPHSE STSALL
TRACKING NO. F02-12-1
PRIORITY: MANDATORY
RATIONALE: TDRS data to be transmitted to JSC in the manner.

1. DESCRIPTION: TDRSS TRACKING DATA REQUIREMENTS

Time-tagging for universal formatted data is one sample-per-ten seconds, time tagged on even seconds; but not necessarily on even tens-of-seconds (e.g., .04, .14, .24, .34).

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/24/84

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 195931
ITEM NUMBER: T40G

[PRD] DATABASE RECORD: 197283 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 02/05/90
INITIAL DATE: 02/05/90
ITEM NUMBER: T41G DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 11:59:17

REQUESTER: JSC
TEST CODE: NOPHSE STSALL
TRACKING NO. F02-12-1
PRIORITY: MANDATORY
RATIONALE: TDSR data to be transmitted to JSC in this format.

1. DESCRIPTION: TDRSS TRACKING DATA FORMAT REQUIREMENTS

Refer to JSC/GSFC ICD JSC-11534 Vol. I and STDN No. 724 for tracking data formatting information.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/21/89

[PRD] DATABASE RECORD: 202336 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 02/24/99
INITIAL DATE: 06/17/91
ITEM NUMBER: T45EG DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 14:27:58

REQUESTER: JSC
TEST CODE: 30 SPW ER LAUNCH MK98
STSALL
TRACKING NO. F008-1 F02-12-1 F106-4 F211-2 F211-3
F403-3 F604-3 F903-2
PRIORITY: REQUIRED
RATIONALE: NASA and DOD stations to have capability to use real-time acquisition data from GSFC and ER.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 202336
ITEM NUMBER: T45EG

1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

During the launch phase, all supporting NASA and DOD stations are required to receive and be able to use INPs (generated by GSFC/FDF or ER RTCS) or electronically transmitted LDES (Launch Designate), generated by ER RTCS, will provide theoretical flight profile data for initial acquisition.

TECHNICAL CONTACT: CSOC/Trajectory Coordinator/281 853-2271

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: EAFB ER KMR
WR WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/24/99

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC450.3 GSFC453.2

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/11/99

[PRD] DATABASE RECORD: 203686 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/03/92
INITIAL DATE: 06/17/91
ITEM NUMBER: T46EG DATE LAST CHANGED: 04/21/04
SECTION: 2100 TIME LAST CHANGED: 11:38:39

REQUESTER: JSC
TEST CODE: EORBIT ER MK98 STSALL

TRACKING NO. A26-67 F008-1 F02-12-1 F106-4 F204-7
F211-2

PRIORITY: MANDATORY

RATIONALE: For GSFC to compute IIRC and IRV acquisition messages based on JSC provided data.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 203686
ITEM NUMBER: T46EG

1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

During on-orbit periods, JSC will transmit ephemeris coordination messages to GSFC on each GMT hour. Messages will reflect the current ephemeris and any maneuvers in the period of 120 minutes into the future. GSFC is required to generate IIRV acquisition messages for supporting STDN stations and IRV acquisition messages for NASA and DOD C-Band stations based on JSC provided data. GSFC will supply hourly ephemeris coordination messages to the DSMC for transmission to WSC.

TECHNICAL CONTACT: Trajectory Coordinator/281 853-2271 or during mission call 281 483-2411

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/03/92

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/553 GSFC/532

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/03/92

[PRD] DATABASE RECORD: 288015 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/17/91
INITIAL DATE: 06/17/91
ITEM NUMBER: T47EG DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 14:35:09

REQUESTER: JSC
TEST CODE: ER LANDNG MK98 RENTRY
STSALL

TRACKING NO. F008-1 F02-12-1 F106-4

PRIORITY: REQUIRED

RATIONALE: For Transmission of entry ephemeris from JSC to GSFC, and subsequent generation of INP aquisition messages by GSFC for transmission to STDN and DOD stations.*
*Mandaory - Requirement becomes mandatory for loss of IMU or NAVAID redundancy.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 288015
ITEM NUMBER: T47EG

1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

During landing periods, JSC will transmit nominal entry/landing ephemeris coordination messages to GSFC not later than 1 hour before AOS of the first landing support station. For any given entry and landing profile, JSC should transmit the sequence only once, unless that profile is updated. GSFC is required to generate INP acquisition messages for supporting STDN and DOD stations based on this data.

TECHNICAL CONTACT: CSOC/Trajectory Coordination/281 853-2271

SUPPLIER: ER AGENCY: ETR/DON (EASTERN SPACE AND MISSILE CENTER ()
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/17/91

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER ()
SUBSUPPLIER: GSFC/530/553 GSFC/534

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/25/91

[PRD] DATABASE RECORD: 360112 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 02/24/99
INITIAL DATE: 01/04/90
ITEM NUMBER: T48.5EG DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 15:08:04

REQUESTER: JSC
TEST CODE: ER FREELY MK98 STSALL

TRACKING NO. F02-12-1 F903-2
PRIORITY: REQUIRED
RATIONALE: for acquisition data generation by ER in support of all deployed vehicles.

1. DESCRIPTION: C-BAND ACQUISITION DATA REQUIREMENTS

C-band Acquisition data for all deployable vehicles requiring orbit

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 360112
ITEM NUMBER: T48.5EG

track will be generated as required. GSFC/FDF will be the prime source of acquisition data for deployables with ER/RTCS serving as a backup. JSC will provide the VID and SIC codes to the FDF and RTCS for all missions which require this data.

TECHNICAL CONTACT: CSOC/Trajectory Coordinator/281 853-2271

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/24/99

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC450.3 GSFC453.2

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/11/99

[PRD] DATABASE RECORD: 302924 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 02/18/99
INITIAL DATE: 03/25/88
ITEM NUMBER: T52EG DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 15:15:11

REQUESTER: JSC
TEST CODE: ALPHSE ER STSALL
TRACKING NO. F008-1 F02-12-1
PRIORITY: REQUIRED
RATIONALE: IRV's and INP's generated at GSFC will be transmitted to the tracking stations.
1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

IRV's and INP's generated at GSFC will be transmitted via NASCOM ASCII TTY to the tracking stations and/or designated DOD interfaces. All acquisition messages for DOD trackers will also be transmitted to the LRCO. (Use the TTY routing symbol "GRCC" for Lead Range messages.)

TECHNICAL CONTACT: CSOC/Trajectory Coordinator/281 853-2271

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 302924
ITEM NUMBER: T52EG

SUBSUPPLIER: EAFB ER KMR
WR WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/18/99

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC450.3 GSFC453.2

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/11/99

[PRD] DATABASE RECORD: 310180 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 03/25/88
INITIAL DATE: 03/25/88
ITEM NUMBER: T53G DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 15:17:34

REQUESTER: JSC
TEST CODE: 30 SPW EAFB ER LATROT
STSALL WSSH
TRACKING NO. F02-12-1
PRIORITY: REQUIRED
RATIONALE: Ephemeris coordination messages generated at JSC will be
transmitted to GSFC in 4800 bit blocks.

1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

Ephemeris coordination messages generated at JSC will be trans-
mitted to GSFC in 4800 bit blocks on the primary and secondary
data circuits

For additional formatting information, reference the JSC/GSFC
ICD JSC-11534.

TECHNICAL CONTACT: CSOC/Trajectory Coordinator/281 853-2271

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/25/88

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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 [PRD] DATABASE RECORD: 313930 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 01/27/92
 INITIAL DATE: 03/25/88
 ITEM NUMBER: T54EG DATE LAST CHANGED: 12/06/02
 SECTION: 2100 TIME LAST CHANGED: 15:20:02

REQUESTER: JSC
 TEST CODE: ALPHSE MK98 STSALL
 TRACKING NO. F008-1 F02-12-1
 PRIORITY: REQUIRED
 RATIONALE: For ERRTCS to transmit real-time acquisition data to
 WR/AFFTC/WSMR.*
 *Mandatory - Requirement becomes mandatory for loss of IMU
 or NAVAIID redundancy.

1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

The ER RTCS is required to transmit real-time acquisition data to WR/AFFTC/WSMR, as appropriate. Data is to be based on the selection of the best tracking source at the RTCS and will be transmitted on the backside of existing tracking data circuits. These data are to be used as a source of Orbiter position for acquisition.

TECHNICAL CONTACT: CSOC/Trajectory Coordinator/281 853-2271

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
 SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/27/92

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
 SUBSUPPLIER: GSFC/530

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/27/92

 [PRD] DATABASE RECORD: 315587 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 01/27/92
 INITIAL DATE: 03/25/88
 ITEM NUMBER: E55G DATE LAST CHANGED: 11/22/02
 SECTION: 2100 TIME LAST CHANGED: 11:49:22

REQUESTER: ER
 TEST CODE: ER LANDNG MIL STSALL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 315587
ITEM NUMBER: E55G

1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

During landings at KSC, MIL (or MLX) is required to transmit
in real-time, MDDF S-band metric data to the ER/CCC.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/27/92

[PRD] DATABASE RECORD: 316351 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/21/04
INITIAL DATE: 01/04/90
ITEM NUMBER: T56.1EGX DATE LAST CHANGED: 07/30/04
SECTION: 2100 TIME LAST CHANGED: 14:31:10

REQUESTER: JSC
TEST CODE: 30 SPW EAFB ER LANDNG
MK98 STSALL
TRACKING NO. F008-1 F02-12-1 F04-04-1 F604-3
PRIORITY: REQUIRED
RATIONALE: For DRFC to have capability to receive and use real-time
pointing trajectory data.

1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

During landings at EAFB, DFRC is required to receive and be able to
use the real-time pointing trajectory data (TAER) from ER computers for
acquisition, and real-time acquisition data from WR.

TECHNICAL CONTACT: Trajectory Coordinator/281 853-2271 or during
mission call 281 483-2411

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER WR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/21/04

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 316351
ITEM NUMBER: T56.1EGX

SUPPLIER COMMITMENT: WILCO

RESPONSE DATE: 04/21/04

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO

RESPONSE DATE: 07/30/04

[PRD] DATABASE RECORD: 235142 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/27/92
INITIAL DATE: 02/05/90
ITEM NUMBER: T58EG DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 15:26:24

REQUESTER: JSC
TEST CODE: EORBIT ER MK98 STSALL

TRACKING NO. F008-1 F02-12-1
PRIORITY: MANDATORY
RATIONALE: For ER/RTCS to maintain ephemeris, generate IRV data,
transmission of data to DOD radars and GSFC MSC via
GSFC/NISN.

1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

During GSFC Bypass operations, acquisition data for supporting
stations will be provided as follows:

1. The ER/RTCS is required to maintain the SSO ephemeris using
the HSR C-band data which is also transmitted to JSC via the
LLTDS. Ephemeris coordination between the ER and JSC will
be via the LLTDS COORD voice circuit.
2. The ER/RTCS is required to generate periodic IRV's from the
SSO ephemeris and transmit them to:
 - a. Supporting DOD C-band radars via DOD TTY facilities.
 - b. GSFC NCC via a NISN TTY circuit.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 235142
ITEM NUMBER: T58EG

3. NISN is required to provide a TTY circuit for transmission of IRV's and INP's from the ER/RTCS to the GSFC, relocated NCC.
4. GSFC is required to transmit the ER/RTCS originated IRV's to the STDN stations by voice, as needed.
5. Look angles for a limited number of stations required for entry/landing support will be provided by JSC/TRACK via voice.

TECHNICAL CONTACT:CSOC/Trajectory Coordinator/281 853-2271

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/27/92

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/534 GSFC/542/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/27/92

[PRD] DATABASE RECORD: 324013 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 09/03/02
INITIAL DATE: 03/25/88
ITEM NUMBER: T58.5EGX DATE LAST CHANGED: 12/17/03
SECTION: 2100 TIME LAST CHANGED: 13:34:56

REQUESTER: JSC
SUBREQUESTER: 30SPW EAFB ER
TEST CODE: EAFB ER MK98 RENTRY
STSALL

TRACKING NO. F008-1 F02-12-1 F903-2

PRIORITY: REQUIRED

RATIONALE: Describes WR requirement to transmit real-time acquisition data to west coast sites for Edwards landing.*
*Mandatory - Requirement becomes mandatory for the loss of IMU or NAVAID redundancy.

1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 324013
ITEM NUMBER: T58.5EGX

For EAFB landings, WR is required to transmit real-time acquisition data to VAFB, Pt. Pillar, and the AFFTC computers (for DFRC). The data will be raw radar data from whichever radar which has acquired track of the SSO. All radars specified above are required to be able to receive and use this data as an acquisition source.

TECHNICAL CONTACT: CSOC/Trajectory Coordinator/281 853-2271

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: EAFB WR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/16/03

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC450.3

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/03/02

[PRD] DATABASE RECORD: 328224 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 02/18/99
INITIAL DATE: 03/25/88
ITEM NUMBER: T59EG DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 15:33:14

REQUESTER: JSC
SUBREQUESTER: 30 SPW EAFB ER WSSH
TEST CODE: 30 SPW EAFB ER LANDNG
MK98 STSALL WSSH

TRACKING NO. F008-1 F02-12-1 F903-2

PRIORITY: REQUIRED

RATIONALE: WR to transmit real-time acquisition data to WSMR area radars for NOR landings. WR tracking work normally be released for landing at Northrup.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 328224
ITEM NUMBER: T59EG

1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

For WSSH landings having post-deorbit passes for WR, AFFTC and DFRC stations, the real-time acquisition data will be sent from WR to the WSMR RDTs via ER RTCS for use by WSMR radars as an acquisition source.

TECHNICAL CONTACT: CSOC/Trajectory Coordinator/281 853-2271

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: EAFB ER WR
WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/18/99

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC450.3

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/11/99

[PRD] DATABASE RECORD: 392226 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/26/96
INITIAL DATE: 03/25/88
ITEM NUMBER: T64G DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 15:38:54

REQUESTER: JSC
SUBREQUESTER: ER
TEST CODE: ER RENTRY STSALL
TRACKING NO. F02-12-1 F604-3
PRIORITY: REQUIRED
RATIONALE: Supporting GN stations are required to receive and be able to use the smooth trajectory vectors.

1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

During landings at KSC, supporting GN stations are required to receive and be able to use the smooth trajectory vectors ODES (Orbit/Landing Designate) from the ER computers for real-time acquisition.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 392226
 ITEM NUMBER: T64G

TECHNICAL CONTACT: CSOC/Trajectory Coordinator/281 853-2271

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
 SUBSUPPLIER: GSFC/553/530 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/26/96

[PRD] DATABASE RECORD: 346852 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 02/18/99
 INITIAL DATE: 06/17/91
 ITEM NUMBER: E65EG DATE LAST CHANGED: 11/19/02
 SECTION: 2100 TIME LAST CHANGED: 15:53:26

REQUESTER: ER
 SUBREQUESTER: 30 SPW EAFB ER WSSH
 TEST CODE: 30 SPW ER ESFB LANDNG
 STSALL WSSH
 TRACKING NO. F008-1 F106-4 F211-5 F301-9 F406-5
 F505-1 F903-2

1. DESCRIPTION: ACQUISITION DATA REQUIREMENTS

During landing periods, GSFC FDF will use the JSC-generated landing ICV,s and is required to generate and transmit landing site Internet Predict (INP) acquisition data to the DOD trackers as shown below.

1. First data point before zero degree elevation.
2. Subsequent data points at even five or ten second intervals (as applicable).
3. Trackers and interval between data points per the following table:

LOCATION	TRACKER TYPE(S)	DATA POINT RATE
AFFTC, CA	FPS-16 Radars	1/15 Sec.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 346852
ITEM NUMBER: E65EG

WSMR, NM	FPS-16 Radars/TLM Acq-aids	1/5 Sec.
Kaena Point, HI	FPQ-14 Radar	1/30 Sec.
Pt. Pillar, CA	Telemetry	1/30 Sec.
Pt. Pillar, CA	FPQ-6 Radar	1/30 Sec.
Pt. Pillar, CA	MPS-36 Radar	1/30 Sec.
San Nicholas Isl., CA	FPS-16 Radar	1/10 Sec.
Vandenberg AFB, CA	Telemetry	1/10 Sec.
Vandenberg AFB, CA	FPS-16 Radars	1/30 Sec.
Vandenberg AFB, CA	TPQ-18 Radar	1/30 Sec.
Vandenberg AFB, CA	HAIR	1/30 Sec.
Vandenberg AFB, CA	MOTR	1/30 Sec.
Merritt Island, FL	FPQ-14 Radar	1/10 Sec.
Merritt Island, FL	MCB-17 Radar	1/20 Sec.
Patrick AFB, FL	FPQ-14 Radar	1/10 Sec.
Cape Canaveral, FL	FPS-16 Radar	1/20 Sec.
Cape Canaveral, FL	MCB-17 Radar	1/20 Sec.
Cape Canaveral, FL	MPS-39 Radar	1/10 Sec.
Kwajalein, Marshall Isl.	ALTAIR/ALCOR/TRADEX/ FPQ-19	1/5 Sec.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: EAFB ER WR
WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/18/99

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/310 GSFC/553

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/11/99
RESPONSE TRACKING: Z302-2 Z305-1

[PRD] DATABASE RECORD: 369716 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 10/05/95
INITIAL DATE: 04/26/88
ITEM NUMBER: T66GS DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 15:42:02

REQUESTER: JSC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 369716
ITEM NUMBER: T66GS

TEST CODE: EORBIT LANDNG STSALL
TRACKING NO. F02-12-1 F301-6 F301-6A F510-2
PRIORITY: REQUIRED
RATIONALE: GSFC will generate and transmit IIRV's and INP's for RTS station support.

1. DESCRIPTION: 21SOPS ACQUISITION DATA REQUIREMENTS

Using JSC-supplied ephemeris coordination messages, GSFC will generate and transmit IIRV's for on-orbit support and INP's for landing support to 21SOPS for RTS station support.

TECHNICAL CONTACT: CSOC/Trajectory Coordinator/281 853-2271

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/05/95

SUPPLIER: 21 SOPS AGENCY: 501/5 SOPS ()
SUBSUPPLIER: 21SOPS/VOS

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/05/95

[PRD] DATABASE RECORD: 356215 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 12/12/97
INITIAL DATE: 03/25/88
ITEM NUMBER: T77EG DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 15:46:56

REQUESTER: JSC
SUBREQUESTER: JSC/DM
TEST CODE: 30 PSW ER FREELY MK98
PREFLT STSALL
TRACKING NO. F008-1 F02-12-1 F712-2
PRIORITY: MANDATORY
RATIONALE: For prelaunch and on-orbit tracking to targets. May involve launch support tracking resources, if available.

1. DESCRIPTION: C-BAND TARGET TRACKING FOR RENDEZVOUS/DEPLOY AND PROXIMITY OPERATIONS

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 356215
ITEM NUMBER: T77EG

ACQUISITION DATA REQUIREMENTS

1. Cognizant center will provide JSC with on-orbit Vector of Flight Article for Ephemeris generation by L/O minus 48 hours. The vector will be referenced to the ARIES Mean of 1950, True of Date Rotating, J2000 Coordinate System.
2. JSC will require C-Band data for orbit determination and ephemeris maintenance when Shuttle launch targeting is required for a rendezvous. Target tracking will be required as follows:
 - a. For targets considered quiescent by JSC (based on flight history), C-Band tracking will be required from L/O minus 24 hours to L/O.
 - b. For active or lesser known targets, C-Band tracking will be required from L/O minus 48 hours to L/O.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/23/97

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/22/97

[PRD] DATABASE RECORD: 380891 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 03/25/88
INITIAL DATE: 03/25/88
ITEM NUMBER: T78EG DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 15:49:42

REQUESTER: JSC
SUBREQUESTER: JSC/DM
TEST CODE: 30 SPW EORBIT ER FREFLY
MK98 STSALL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 380891
ITEM NUMBER: T78EG

TRACKING NO. F008-1 F02-12-1
PRIORITY: MANDATORY
RATIONALE: For tracking of targets during rendezvous, deploy and
proximity operations.

1. DESCRIPTION: C-BAND TARGET TRACKING FOR RENDEZVOUS/DEPLOY AND
PROXIMITY OPERATIONS

ACQUISITION DATA REQUIREMENTS

1. Rendezvous/deploy and proximity operations - JSC requires C-band data for orbit determination and ephemeris maintenance. The density of this tracking support is dictated by the activity being supported and by the targets characteristics.
2. Shuttle S-band tracking requirements in support of deploy operations are addressed in a separate Shuttle OPS requirement.
3. Post deployment of a flight article - JSC requires C-band data for orbit determination and ephemeris maintenance. The density of this tracking support is dictated by the activity being supported and by the targets characteristics.

TECHNICAL CONTACT: USA/Navigation Manager/281 282-3567

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/25/88

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/29/88

FLS2100.044 PAGE SEQUENCE NUMBER: 74 REF UDS R G/A
CLASSIFICATION UNCLASSIFIED

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04
===== =
[PRD] DATABASE RECORD: 9950 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/07/98
INITIAL DATE: 03/28/88
ITEM NUMBER: T84EG DATE LAST CHANGED: 12/06/02
SECTION: 2100 TIME LAST CHANGED: 16:01:10

REQUESTER: JSC
TEST CODE: 30 SPW ER MK98 NOPHSE
STSALL WSNS
TRACKING NO. F008-1 F02-12-1 F301-6 F801-1
PRIORITY: REQUIRED
RATIONALE: For selected C-Band and S-Band support during validation testing.

1. DESCRIPTION: GN/RTCS METRIC VALIDATION TESTING

Periodically, selected C-Band and S-Band tracking stations are required to support Validation Testing. Validation Testing may include one or more of the following activities:

1. Boresight tower data flow.
2. Dynamic tracking of targets of opportunity.
3. Data replay.
4. Acquisition data evaluation.
5. GSFC bypass.
6. Best source selection.

TECHNICAL CONTACT: CSOC/Trajectory Coordinator/281853-2271

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: EAFB ER KMR
WR WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/23/98

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/501

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/12/98

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2100 - METRIC DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04
===== =
[PRD] DATABASE RECORD: 520223 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/30/92
INITIAL DATE: 06/30/92
ITEM NUMBER: T89G DATE LAST CHANGED: 11/19/02
SECTION: 2100 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: EMCC EORBIT EOTERY LANDNG
REENTRY STSALL
TRACKING NO. F02-12-1 F207-2
PRIORITY: REQUIRED
RATIONALE: Orbiter State Vectors to the EMCC.

1. DESCRIPTION: C-BAND REQUIREMENT (EMCC OPERATION ONLY)

Process C-Band Radar data and output the ground derived
Orbiter State Vectors to the EMCC.

COORDINATION: JSC/DV/Mike Marsh/ 281-483-4761

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/09/92

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04
===== =
[PRD] DATABASE RECORD: 353724 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/17/98
INITIAL DATE: 03/12/90
ITEM NUMBER: T1G DATE LAST CHANGED: 01/23/04
SECTION: 2200 TIME LAST CHANGED: 09:52:14

REQUESTER: JSC
SUBREQUESTER: GSFC/501
TEST CODE: ALPHSE FLIGHT PR STSALL
TRACKING NO. F008-1 F301-1 F701-4 F708-2 F803-3

1. DESCRIPTION: GN TELEMETRY SUPPORT

GN stations (as specified in the 2000 section of the PRD) are required to receive and record Orbiter PM and FM telemetry links and decommutate, process, and remote real-time and non-real-time PCM telemetry during all mission phases. Ground stations should function in accordance with the following requirements.

Receive and Record

1. 192 or 96 Kb/s (HBR/LBR) Operational Downlink (OD) containing multiplexed and digitized voice.
2. Data on FM downlink consisting of (one at a time):
 - a. Main Engine Data (SSME); 3 channels at 60 Kb/s per channel from T-45 minutes to MIL LOS. MIL will transmit SSME data to JSC in real time. PDL is only required to record SSME data.
 - b. Dump of one channel of 60 Kb/s of SSME at rates as stated in the 1405 section.
 - c. Real-time or dump attached/proximity payload data as stated in Section 1405, up to 1.024 Mb/s.
 - d. Real-time or dump attached payload data as stated in Sec.1405
 - e. Dump of 96 Kb/s PCM TLM at rates as stated in the 1405 section.
 - f. Dump of 128 Kb/s PCM TLM at rates as stated in the 1405 section.
 - g. Dump of 192 Kb/s PCM TLM at rates as stated in the 1405 section.

Real-time Time Processing of Operational Downlink (OD)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 353724
 ITEM NUMBER: T1G

1. Remote 192/96 Kb/s telemetry to MCC via GSFC.
2. Time tag should reflect GMT of receipt of first data bit in standard NASCOM format.

GSFC COORDINATION: GSFC/451.0/James Bangerter/301 286-7306

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
 SUBSUPPLIER: GSFC/530 GSFC/886 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/22/03
 RESPONSE:

 [PRD] DATABASE RECORD: 8402 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 11/28/01
 INITIAL DATE: 01/12/87
 ITEM NUMBER: H1.5GT DATE LAST CHANGED: 11/22/02
 SECTION: 2200 TIME LAST CHANGED: 11:49:22

REQUESTER: MSFC
 SUBREQUESTER: MDRC
 TEST CODE: ALPHSE LAUNCH MSYSEN STSALL
 TRACKING NO. F007-1 F109-7 F111-1 F402-1 F507-4
 F702-1 F801-2

1. DESCRIPTION: MSFC RT OD TLM REQUIREMENT

MSFC requires all available real-time OD data, provided by JSC
 output via GSFC from Launch -24 hours to Landing.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
 SUBSUPPLIER: GSFC450.3 MIL WLP

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/20/01

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 8402
ITEM NUMBER: H1.5GT

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 11/28/01
RESPONSE: If Payload Contingency Communications (PCC) is required
for classified payloads; JSC will inhibit the OD output
(TLM & Voice) to all external centers. Upon completion
of the PCC, centers may request a playback of the telemetry
data.

[PRD] DATABASE RECORD: 388006 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/07/98
INITIAL DATE: 03/12/90
ITEM NUMBER: T3GS DATE LAST CHANGED: 11/25/02
SECTION: 2200 TIME LAST CHANGED: 13:16:18
REQUESTER: JSC
TEST CODE: LATROT STSALL
TRACKING NO. F301-1 F506-4 F801-1

1. DESCRIPTION: GN R/T PLAYBACK AND DUMP PROCESSING

During Shuttle flights, GN and 21SOPS/RTS will receive and record all
FM transmitted orbiter data, operations record dumps, real time payload
data or Payload Recorder dumps, real-time SSME data or video.
Selected data downlinked by the FM system will be required by MCC
post-pass. AFSCN/21SOPS will receive and record bit rates to 1.024 Mbs
video to 2Mhz.

During post-pass periods, each station is required to provide
(not simultaneously) the capability for:

1. Processing the recorded 192 or 96 kb/s R/T OD at a 1:1 rate
through playbacks:

- a. Remote 192/128 or 96/64 kb/s R/T OD to JSC as if it
were R/T data.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 388006
ITEM NUMBER: T3GS

- b. Assure time tag reflects GMT of actual station receipt and is derived from the time track of the wideband tape recorder.
 - c. Assign a unique message type, data stream ID for OD R/T playback.
2. Processing the onboard recorded OD which has been dumped at the dump rate or a rate equivalent to its original Orbiter rate:
 - a. Remote Dumped OD to JSC
 - b. Assure time tag reflects the GMT which data was processed and remoted.
 - c. Assign a unique message type, data stream ID for OD dump playback.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/12/98

SUPPLIER: 21 SOPS AGENCY: 21 SOPS (21 SPACE OPERATIONS SQUADRON (21 S)
SUBSUPPLIER: 21SOPS

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/12/98

[PRD] DATABASE RECORD: 388727 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/04/02
INITIAL DATE: 05/10/91
ITEM NUMBER: H4GT DATE LAST CHANGED: 03/21/03
SECTION: 2200 TIME LAST CHANGED: 14:00:09

REQUESTER: MSFC
TEST CODE: LAUNCH STSALL
TRACKING NO. F02-11-1 F105-7 F505-1 MS039

1. DESCRIPTION: GN/SN SSME DUMP OPS1 RECORDER #1/SSR #2 SSME PLAYBACK

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 388727
ITEM NUMBER: H4GT

MSFC requires OPS Recorder #1 or SSR #2 to record SSME 60 KBPS data for the time period T -330 seconds through MECO +600 seconds for subsequent dump to GN and playback to MSFC. Playback to MSFC should be all engines in a forward direction in NASCOM format at a 2:1 rate. The dumps and playback should be performed as early in the mission as possible. JSC is requested to retain this data on the onboard recorder/SSR until MSFC has validated the data. MSFC will process the data in near real-time and advise JSC within 1 hour of receipt of valid data.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: DSN GSFC/530 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)
SUBSUPPLIER: USH-443C

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/04/02

[PRD] DATABASE RECORD: 215204 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 03/28/88
INITIAL DATE: 03/28/88
ITEM NUMBER: T12G DATE LAST CHANGED: 11/19/02
SECTION: 2200 TIME LAST CHANGED: 15:53:25

REQUESTER: JSC
TEST CODE: LATROT STSALL

1. DESCRIPTION: GN SITE STATUS MESSAGE REQUIREMENTS

A site status message is required to be generated and transmitted once-per-second from each S-band station.

The format and specific site requirements are as defined in JSC/GSFC External Communications ICD JSC-11534 Vol I.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: DSN GSFC/531/530 MIL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 215204
ITEM NUMBER: T12G

SUPPLIER COMMITMENT: WILCO

RESPONSE DATE: 03/28/88

[PRD] DATABASE RECORD: 380540 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/05/98
INITIAL DATE: 03/12/90
ITEM NUMBER: T14GS DATE LAST CHANGED: 11/19/02
SECTION: 2200 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
SUBREQUESTER: KSC
TEST CODE: KSC PREFLT STSALL
TRACKING NO. F301-1 F801-1

1. DESCRIPTION: GN, 21SOPS/RTS TELEMETRY VALIDATION TESTING

Periodically selected stations are required to support validation testing. Validation testing configurations at selected remote sites requires standard equipment used in normal mission support configurations.

The periodic validation tests require use of an on-site data source in order to support the following conditions:

1. Main frame sync errors
2. Loss of lock
3. Frame counter errors
4. Time word errors

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/533 MIL

SUPPLIER COMMITMENT: WILCO

RESPONSE DATE: 01/12/98

SUPPLIER: 21 SOPS AGENCY: 501/5 SOPS ()
SUBSUPPLIER: 21SOPS

SUPPLIER COMMITMENT: WILCO

RESPONSE DATE: 01/12/98

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04
===== =
[PRD] DATABASE RECORD: 349538 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/31/98
INITIAL DATE: 07/23/90
ITEM NUMBER: G14.5EGST DATE LAST CHANGED: 09/04/03
SECTION: 2200 TIME LAST CHANGED: 11:00:03

REQUESTER: GSFC
SUBREQUESTER: GSFC/533
TEST CODE: 30 SPW DATADS MIL PREFLT
STSALL
TRACKING NO. F403-3 F505-1 F803-5

1. DESCRIPTION: JSC, GN, DOD, 21SOPS, DFRC TELEMETRY VALIDATION
TESTING

Reference Section 2200, Item T14G, DBR=380540. Capability is
required to use a JSC generated tape as a source of data, if
needed.

DATA DISPOSITION

REF	DATA TYPE	QUAN	TIME REQ	RECIPIENT/REMARKS
---	-----	----	-----	-----
G1	TLM-ANALOG MAG TAPE-JSC VALIDATION TEST	1 CY	L -150 DAYS IF REQUESTED	GSFC J. Bangerter, CODE 451.0. USED FOR JSC VALIDATION AND GSFC VERIFICATION TEST.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: AFSCN ER WR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/19/02

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/31/98

SUPPLIER: 21 SOPS AGENCY: 21 SOPS (21 SPACE OPERATIONS SQUADRON (21 S)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/31/98

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 349538
ITEM NUMBER: G14.5EGST

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/31/98

[PRD] DATABASE RECORD: 388164 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 03/28/88
INITIAL DATE: 03/28/88
ITEM NUMBER: T17GX DATE LAST CHANGED: 11/19/02
SECTION: 2200 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: EAFB LANDNG POSFLT STSALL

1. DESCRIPTION: DFRC REAL TIME SUPPORT

The DFRC telemetry system is required to receive, record and remote the SSO 192/96 kb/s OD downlink for Orbiter landings at EAFB. Support is required until crew egress (approximately landing + 45 minutes). If Orbiter remains powered and KSC is unable to receive/process telemetry, then DFRC-to-MCC telemetry support is required until KSC restoration is accomplished.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/534

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/28/88

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/28/88

RESPONSE: DFRC will provide S-Band downlink telemetry from AOS to landing and after landing will provided telemetry for up to 105 hours. This data will be recorded from AOS to landing plus hours.
The S-Band telemetry support will be provided for scheduled landings at EAFB. For unscheduled landings,

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 388164
ITEM NUMBER: T17GX

support can be provided on a 3 hour call or best effort
at the request of JSC.

[PRD] DATABASE RECORD:	392597	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	01/21/04
		INITIAL DATE:	02/12/90
ITEM NUMBER:	T19G	DATE LAST CHANGED:	01/22/04
SECTION:	2200	TIME LAST CHANGED:	16:04:33
REQUESTER:	JSC		
SUBREQUESTER:	JSC/MT	TVPLAN	
TEST CODE:	LAEORY	STSALL	
TRACKING NO.	F02-11-1		

1. DESCRIPTION: WSC RECORDING/PLAYBACK

During all phases of Shuttle Operational Support, line outage recording capability is required for all TYPE I data. TYPE II data which includes High-Rate Multiplexer (HRM) data during missions involving TDRSS KSA return channel 3 activity (i.e. Spacehab) will recorded on HDDR.

TYPE I (OI, R/T and dump data) tapes will be held for 50 hours from completion of Event, with the capability of JSC extending the hold for up to 16 days with a verbal request to be followed by a written request for hold.

TYPE II tapes will be held for a minimum of 50 hours after completion of event. If no playback requests are pending, then degaussed.

TV Video recorders will be operated during scheduled TV times and held until playback is completed or released by JSC.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/534 WSC

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/22/04

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

===== =
[PRD] DATABASE RECORD: 376761 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 08/20/02
INITIAL DATE: 01/30/91
ITEM NUMBER: HK23GKST DATE LAST CHANGED: 11/04/02
SECTION: 2200 TIME LAST CHANGED: 13:48:35

REQUESTER: MSFC KSC
SUBREQUESTER: PH-M2 UB-E1
TEST CODE: ALPHSE EORBIT STSALL
TRACKING NO. F02-08-1 F02-08-1A F02-08-5 F101-6 F102-5
F103-1 F302-10 F801-2 F801-3 F908-2
FSRR3901 FSRR3902 FSRR8901 RSRR3901

1. DESCRIPTION: KSC/MSFC REALTIME TELEMETRY

KSC and MSFC require real time downlink OD PCM telemetry data from JSC.
This data will be received at JSC from GN/SN/RTS supporting the
mission. JSC will remote the data via NISN, to KSC via MILA and to
MSFC.

MIL is required to receive and serialize these data (HDR telemetry
192Kbps; or LDR telemetry, 96 Kbps, as received) for input to the LPS
for all missions. Data will be displayed in real time on the LCC Control

Room consoles.

KSC Contacts: Jose Amador/UB-E1 321 867-3945
Debbie Awtonomow/PH-M2 321 861-3972
Dick Hartung/KSC/LPS/ 321 861-6572

MSFC Contacts: Gary Dempsey/UMS/NTI 256 544-5113

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC1135 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/20/02
RESPONSE TRACKING: Z103-1

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: GSFC/450 PH-K1-A

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 08/20/02

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 376761
ITEM NUMBER: HK23GKST

RESPONSE: S-Band PM/OI 192 and 96 Kb/s to LPS/CCMSS/CCMS data will
be furnished on assigned wideband lines for use in LCC
control rooms 1, 2, or 3.

RESPONSE TRACKING: ZR3501 ZR3901 ZR3902 ZR8902 ZR9901

SUPPLIER: 21 SOPS AGENCY: 501/5 SOPS ()
SUBSUPPLIER: 21SOPS/VOS

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/20/02

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/20/02

[PRD] DATABASE RECORD: 380172 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 02/18/97
INITIAL DATE: 01/14/86
ITEM NUMBER: H24G DATE LAST CHANGED: 07/03/02
SECTION: 2200 TIME LAST CHANGED: 08:04:59

REQUESTER: MSFC
SUBREQUESTER: F702-3
TEST CODE: LAUNCH STSALL

1. DESCRIPTION: SSME R/T DOWNLINKED DATA

MSFC requires SSME data recorded during Ascent from the SSO S-Band FM
link to Mila LOS.

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/18/97

FLS2200.011 PAGE SEQUENCE NUMBER: 87 REF UDS R G/A
CLASSIFICATION UNCLASSIFIED

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04
===== =
[PRD] DATABASE RECORD: 382075 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 08/21/03
INITIAL DATE: 02/07/90
ITEM NUMBER: HK25G DATE LAST CHANGED: 04/21/04
SECTION: 2200 TIME LAST CHANGED: 11:45:48

REQUESTER: MSFC KSC
SUBREQUESTER: I-PK-E3 ROC-OSB RPS/USK-669
TEST CODE: DATADS LATROT MIL STSALL

TRACKING NO. F03-08-3 F04-04-1 F303-4 F408-4 F903-4
MS164 RSRR5503

1. DESCRIPTION: SSME ONBOARD RECORDED DATA

All SSME data that is recorded onboard the SSO is required to be downlinked ASAP. This data downlinked via the SSO S-band FM link is to be recorded at the receiving GN stations. SSME data will be played back to KSC upon request. SSME dumps will be played back to MSFC ASAP on a routine basis.

NOTE: MIL and PDL to retain recorded SSME data on station for 21 days and during that time will be available for playback. Playbacks will be scheduled through the WSC Scheduling Office. After 21 days SSME tapes may be degaussed. Requests for data to be held beyond 21 days will be directed to the GSFC STDN Mission Manager (SMM) or Network Operations Manager (NOM).

TECHNICAL CONTACT: WSC Operations Supervisor (OS)(505) 527-7157

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/27/03
RESPONSE: Shipment of tape within 12 hours is dependent on air freight schedules.

[PRD] DATABASE RECORD: 254153 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 08/21/03
INITIAL DATE: 07/02/91
ITEM NUMBER: K28GHKT DATE LAST CHANGED: 04/21/04

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 254153
ITEM NUMBER: K28GHKT

SECTION: 2200 TIME LAST CHANGED: 11:48:06

REQUESTER: KSC
SUBREQUESTER: I-PK-E ROC-OSB
TEST CODE: DATADS EORBIT LAUNCH STSALL

TRACKING NO.	F02-11-1	F03-04-1	F03-08-3	F04-04-1	F107-2
	F108-4	F109-8	F303-4	F306-1	F306-1A
	F403-6	F607-1	F805-1	F904-6	FSRR4301
	FSRR4402	FSRR5702	RSRR113-1	RSRR5503	RSRR9101

1. DESCRIPTION: ASCENT DUMPED DATA - KSC

KSC requires the data from the orbiter SSR 2 (SSME data from T-5 thru T+15 minutes) and SSR 1 (OI data from T-5 thru T+42 minutes).

Preferred method for obtaining SSR 2 (SSME DATA) is for GSFC/MILA to extend the real time SSR post ascent dump to KSC/RPS. Call RPS Test Conductor, 321 861-6212/861-0830 or RPS COORD (OIS 238), before expected in-flight dump to TRDSS. JSC/TELECOM is to notify WSC OPS GSFC COMM Manager and MILA OPSR of the start time and parameters.

If SSR 2 real-time dump not received, or unusable, a playback of SSR 2 dump (not merged) data will be requested from MSFC.

Preferred method for obtaining SSR 1 (OI data) is for MSFC to provide KSC/RPS a playback of the SSR 1 (not merged) dump data. Coordinate the playback on GN Coord.

Technical Contacts: KSC/RPS/Renee Hart (321) 861-0988
GSFC/MIL Operations Support/(321) 867-3518
MSFC/Gary Dempsey/(256) 544-5113
JSC/TELECOM/(281)483-2411

NOTE: If playback is unsuccessful, provide tape copy to:
KSC/USK-669/RPS/(321) 861-6212

REF: ITEM KHTY51.1K SECTION 2750 DBR 234166
ITEM T4.1KT SECTION 2750 DBR 295559

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 254153
ITEM NUMBER: K28GHKT

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/109 GSFC/155 GSFC/340
GSFC/341 GSFC739 MIL
RESPONDER: JOSEPH FANNELLI/DF

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/27/03

SUPPLIER: MSFC AGENCY: MSFC/FD43 (MARSHALL SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/22/03
RESPONSE TRACKING: FSRR090 MS180 RSRR146 RSRR158

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: I-PH-K1-A RPS USK-610
USK-669

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 08/21/03
RESPONSE TRACKING: ZF113-1 ZFR4301 ZFR5701 ZFR8304 ZFR9101

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/21/03

[PRD] DATABASE RECORD: 216096 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/08/94
INITIAL DATE: 03/28/88
ITEM NUMBER: T32G DATE LAST CHANGED: 11/22/02
SECTION: 2200 TIME LAST CHANGED: 11:49:22

REQUESTER: JSC
TEST CODE: LATROT STSALL
TRACKING NO. F403-3

1. DESCRIPTION: SN TELEMETRY SUPPORT REQUIREMENTS

The SN is required to receive, record, convolutionally decode (when required) and remote the following data, as applicable, to JSC.
Remoting will be simultaneously over the prime and alternate MDM

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 216096
ITEM NUMBER: T32G

circuits.

1. 192 Kb/s (HBR) or 96 Kb/s (LBR) real-time OD data via S-band
2. 192 Kb/s (HBR) via Ku-band
3. Up to 1.024 Mb/s dumped data
4. Time tag all telemetry with actual GMT of receipt by the ground station:
 - a. Time tag will be accurate to within plus or minus 1.0 millisecond.
 - b. Time format is provided in the JSC/GSFC ICD No.11534 Vol. I, Telemetry Section

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/534 WSC

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/08/94

[PRD] DATABASE RECORD: 234662 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/15/95
INITIAL DATE: 05/10/91
ITEM NUMBER: GHT38G DATE LAST CHANGED: 04/21/04
SECTION: 2200 TIME LAST CHANGED: 11:55:59

REQUESTER: GSFC MSFC JSC
TEST CODE: EORBIT STSALL
TRACKING NO. F04-04-1 F105-7 F505-1

1. DESCRIPTION: SN KU-BAND CHANNEL 2 REQUIREMENTS

The SN is required to have the capability to remote Ku-band Channel 2 data to MCC, GSFC, and MSFC via the Closed IONET circuit. In addition to Orbiter OD Dumps, data will include payload R/T or dump data.

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 234662
ITEM NUMBER: GHT38G

SUBSUPPLIER: GSFC/534

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/19/95

[PRD] DATABASE RECORD: 237506 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/15/95
INITIAL DATE: 05/10/91
ITEM NUMBER: GHT39G DATE LAST CHANGED: 04/21/04
SECTION: 2200 TIME LAST CHANGED: 11:58:24

REQUESTER: GSFC MSFC JSC
TEST CODE: EORBIT STSALL
TRACKING NO. F04-04-1 F105-7 F505-1

1. DESCRIPTION: SN KU-BAND CHANNEL 3 REQUIREMENTS

The SN is required to have the capability to remote Ku-band Channel 3 data to MCC, GSFC, and MSFC. Channel 3 bit rates within the bandwidth of the Closed IONET circuitry may be remoted. Channel 3 bit rates exceeding the Closed IONET circuitry bandwidth will be transmitted to MCC via the statistical mux.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/530/534 GSFC/540

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/19/95

[PRD] DATABASE RECORD: 241151 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/04/02
INITIAL DATE: 03/28/88
ITEM NUMBER: H41GT DATE LAST CHANGED: 03/21/03
SECTION: 2200 TIME LAST CHANGED: 14:01:04

REQUESTER: MSFC
TEST CODE: LAEORB STSALL
TRACKING NO. F02-11-1

1. DESCRIPTION: SN SSME DUMP SUPPORT REQUIREMENTS

The SN is required to receive, record and remote the following

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 241151
ITEM NUMBER: H41GT

data, as applicable to MSFC. Remoting the data will be direct to MSFC via GSFC:

1. MSFC requires an OPS Recorder #1/SSR #2 SSME dump at 960 Kb/s SSME dump at 960 Kb/s thru TDRS with direct relay to MSFC via GSFC. JSC is requested to retain data on the SSO onboard OPS Recorder #1/SSR #2 until MSFC has validated data. MSFC will process the data in near real time and advise JSC (within one hour) of receipt of valid data. Pre-launch testing of data circuits for this requirement and data transmission is required. SSME dump data relayed to MSFC should be recorded at WSC with the tape being retained for 24 hours and degaussed if P/B is not required.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/WSC/534

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)
SUBSUPPLIER: USH-443N

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 11/04/02
RESPONSE: JSC cannot guarantee that the OPS Recorder 31/SSR #2 SSME dumps will always occur via TDRS. JSC will retain the option to dump SSME data to GN (MIL) as covered is Section 2200, Item H4G DBR 388727 and T29G DBR 392095.

[PRD] DATABASE RECORD: 242615 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 02/02/04
INITIAL DATE: 02/07/90
ITEM NUMBER: H43GT DATE LAST CHANGED: 07/26/04
SECTION: 2200 TIME LAST CHANGED: 09:25:40

REQUESTER: MSFC
TEST CODE: DATADS LAUNCH STSALL
TRACKING NO. F02-11-1 F04-01-2 F04-02-1 F702-1 F903-4

1. DESCRIPTION: OPS-2 RECORDER/SSR #1 DUMP TO MSFC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 242615
ITEM NUMBER: H43GT

MSFC requires that the ascent phase OD through MET of 60 minutes from the OD SSR will be dumped to the ground and recorded. The data shall be played back to MSFC via the JSC/MSFC Playback OD back-feed/GSFC Closed IONET interface as soon as possible after the dump is completed.

In the event that the ascent OD data is dumped via TDRSS, the data should be received at MSFC in real-time.

JSC will be the source of all OD SSR dump playbacks to MSFC.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: DSN GSFC/534 GSFC/562
MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/23/04

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)
SUBSUPPLIER: USH-443C

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/02/04

[PRD] DATABASE RECORD: 16392 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/08/03
INITIAL DATE: 11/28/88
ITEM NUMBER: K49GKT DATE LAST CHANGED: 03/21/03
SECTION: 2200 TIME LAST CHANGED: 14:01:40

REQUESTER: KSC
SUBREQUESTER: PH-F1
TEST CODE: ALPHSE STSALL
TRACKING NO. A27-01 A27-07 F02-08-1 F02-08-5 F03-01-1
RSRR113-2

1. DESCRIPTION: MISSION DATA MILA TO KSC/RPS

JSC is required to provide all real time mission data (OD PCM telemetry and 72 KBPS uplink commands) to the LCC/RPS. Commands are to be de-blocked and decrypted by MILA prior to routing to the

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 16392
ITEM NUMBER: K49GKT

LCC/RPS.

RPS is requested to record all shuttle mission data 24 hours a day
during all shuttle missions.

TECHNICAL CONTACT: KSC/PH-F1/P. JOHNSON/321-861-3863

REF: HK23GKST Section 2200 DBR 016392

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/450 MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: PH-K1-A RPS

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/08/03

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/08/03

[PRD] DATABASE RECORD: 520236 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/07/03
INITIAL DATE: 06/30/92
ITEM NUMBER: KT51GK DATE LAST CHANGED: 08/27/03
SECTION: 2200 TIME LAST CHANGED: 14:12:19

REQUESTER: KSC JSC
SUBREQUESTER: PZ-A3
TEST CODE: EMCC EORBIT EOTERY LANDNG
REENTRY
TRACKING NO. F03-08-3 F207-2 F208-1 F801-3 FSRR8901

1. DESCRIPTION: KSC REALTIME TELEMETRY (EMCC OPERATION ONLY)

KSC requires downlink OD telemetry data, in real-time, remoted
via NISN to KSC via MIL from GN and SN supporting the mission.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520236
ITEM NUMBER: KT51GK

MIL is required to receive and serialize the data (HDR telemetry
192 Kb/s or LDR telemetry, 96 Kb/s, as received) for input to the
LPS/EMCC for all missions. Data will be displayed in real-time on
on the LCC/ EMCC Control Room consoles.

KSC will record all telemetry data and retain all tapes until that
vehicle has flown again.

TECH CONTACT: KSC/LPS/DICK HARTUNG/321 861-0588
KSC/PH-K1-A/RON PENN/321 861-7333
KSC/RPS/RENEE HART/321 861-0988

COORDINATION: JSC/DV/Mike Marsh/281 483-4761

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: MIL

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/07/03

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: PH-K1-A RPS

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/07/03
RESPONSE TRACKING: ZFR4602 ZFR4703 ZFR8902

[PRD] DATABASE RECORD: 520225 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/30/92
INITIAL DATE: 06/30/92
ITEM NUMBER: T52G DATE LAST CHANGED: 11/19/02
SECTION: 2200 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: EMCC EORBIT EOTERY LANDNG
REENTRY STSALL
TRACKING NO. F207-2

1. DESCRIPTION: TELEMETRY REQUIREMENT (EMCC OPERATION ONLY)

MIL Telemetry Requirements:

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520225
ITEM NUMBER: T52G

Deblock 192/96 Kbs Orbiter downlink, strip out A/G voice V1 and V2
and transmit the voice and data to the EMCC.

COORDINATION: JSC/DV/Mike Marsh/281 483-4761

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/09/92

[PRD] DATABASE RECORD: 523224 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 08/21/03
INITIAL DATE: 06/07/93
ITEM NUMBER: K53GT DATE LAST CHANGED: 08/27/03
SECTION: 2200 TIME LAST CHANGED: 14:13:07

REQUESTER: KSC
SUBREQUESTER: PZ-F5
TEST CODE: EORBIT FSRR5701 STSALL
TRACKING NO. F02-11-1 F03-08-3 F306-1 RSRR113-1

1. DESCRIPTION: ON ORBIT SSR DUMPED DATA

KSC requests JSC have the on orbit SSR Recorder Dump data available
for tape dub and shipment to KSC/RPS, upon request, to support KSC
engineering trouble-shooting/evaluation. Data time will be provided
by RPS.

If KSC engineering requests a quick look, JSC is to provide KSC/RPS
with a playback of the data via GSFC NISN/MILA.

NOTE: Playback is to be coordinated by the JSC NIP SUP with GSFC OPS,
MILA and KSC/RPS.

TECH CONTACTS:

JSC TELECOM/281 483-2411
GSFC/MIL OPERATIONS SUPPORT/321 867-3518
KSC/RPS/RENEE HART/321 861-0988

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 523224
ITEM NUMBER: K53GT

KSC/RPS/321 861-0830
KSC/PZ-F5/P. JOHNSON/321-861-3763

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/340

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/27/03

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)
RESPONDER: JOSEPH FANNELLI/DF

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/21/03

[PRD] DATABASE RECORD: 525304 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/28/01
INITIAL DATE: 12/13/93
ITEM NUMBER: H54GT DATE LAST CHANGED: 11/19/02
SECTION: 2200 TIME LAST CHANGED: 15:53:26

REQUESTER: MSFC
SUBREQUESTER: MDRC
TEST CODE: ALPHSE MSYSEN STSALL
TRACKING NO. F007-1 F01-08-2 F111-1 F402-1A FF312-2

1. DESCRIPTION: MSFC OD Dump Playback

MSFC requires playback of all OD dump data from Launch to Landing.

NOTE: Flight PRD Vol. II Annexes will take precedence over this requirement.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/20/01

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 11/28/01
RESPONSE: JSC will provide OD playback data on a best effort/non

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 525304
ITEM NUMBER: H54GT

interference bases.

[PRD] DATABASE RECORD: 529999 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/16/98
INITIAL DATE: 04/17/95
ITEM NUMBER: T55G DATE LAST CHANGED: 11/19/02
SECTION: 2200 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
SUBREQUESTER: JSC/DV
TEST CODE: EORBIT STSALL
TRACKING NO. F02-11-1 F504-3 F602-2 F604-1 F801-4

1. DESCRIPTION: ZONE OF EXCLUSION

JSC requires Zone of Exclusion (ZOE) coverage via TDRSS, as required, during special mission phases. The SN is required to support S-Band return link telemetry (192Kb/s or 96Kb/s), S-Band forward link command (32Kb/s or 72Kb/s), K-Band forward link (72Kb/s or 216Kb/s), K-Band channel 1 return link (192Kb/s), and K-Band channel 2 return link (up to 1024Kb/s), with TDRS-Z (ZOE closure TDRS) at either Hi or Low frequency and route the data to/from JSC.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/651

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 01/21/98
RESPONSE: Passes not scheduled more than one hour in advance would be supported on a best effort basis only. K-band services will be supplied after ZOE ground terminal is transitioned to Guam, and appropriated level of communications services are funded to accommodate Ku channel 2 and channel 3 high rate services.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2300 - COMMAND SYSTEMS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD:	371320	REQUIREMENT STATUS:	APPROVED
DOCUMENT ID:	FLT-I	APPROVAL DATE:	08/16/90
		INITIAL DATE:	08/16/90
ITEM NUMBER:	T5G	DATE LAST CHANGED:	11/19/02
SECTION:	2300	TIME LAST CHANGED:	15:53:26
REQUESTER:	JSC		
TEST CODE:	LATROT	STSALL	
TRACKING NO.	F008-1		

1. DESCRIPTION: GN VALIDATION OF RECEIVED NASCOM BLOCKS

Each station is required to perform input validation on all command data uplinked. The details regarding input validation requirements are included in the Command section of the JSC/GSFC ICD No. JSC-11534 for GN.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/25/91

[PRD] DATABASE RECORD:	376145	REQUIREMENT STATUS:	APPROVED
DOCUMENT ID:	FLT-I	APPROVAL DATE:	02/06/90
		INITIAL DATE:	02/06/90
ITEM NUMBER:	T6G	DATE LAST CHANGED:	11/19/02
SECTION:	2300	TIME LAST CHANGED:	15:53:26
REQUESTER:	JSC		
TEST CODE:	LATROT	STSALL	
TRACKING NO.	F008-1		

1. DESCRIPTION: GN TEST MODE FOR THROUGHPUT COMMAND/VOICE (T C/V)
SUPPORT

Each station is required to have the capability to configure the RF link into a dummy load. This capability will be used to verify the station's readiness to support a pass/support period and will ensure that no RF is radiated.

Where provided, all remote site status must be valid while in this configuration.

A discrete to JSC will signify when the station is transmitting into a dummy load.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2300 - COMMAND SYSTEMS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 376145
ITEM NUMBER: T6G

A RF command history must be obtainable while transmitting
into a dummy load.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/08/90

[PRD] DATABASE RECORD: 384814 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/05/98
INITIAL DATE: 02/06/90
ITEM NUMBER: T8GSX DATE LAST CHANGED: 11/19/02
SECTION: 2300 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: EAFB PREFLT STSALL
TRACKING NO. F008-1 F301-1 F801-1

1. DESCRIPTION: DFRC/GN/RTS COMMAND VALIDATION TESTING

Periodically, each station is required to support command
validation testing. Validation testing configurations at each
remote site requires only standard equipment used in normal
mission support configurations.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/12/98

SUPPLIER: 21 SOPS AGENCY: 501/5 SOPS ()

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/12/98

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/28/98

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2300 - COMMAND SYSTEMS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD:      332178      REQUIREMENT STATUS: APPROVED
DOCUMENT ID:                FLT-I        APPROVAL DATE:      07/23/90
                                     INITIAL DATE:      07/23/90
ITEM NUMBER:                T10GS        DATE LAST CHANGED:   11/19/02
SECTION:                    2300         TIME LAST CHANGED:   15:53:25

REQUESTER:                  JSC
TEST CODE:                  LATROT        STSALL
TRACKING NO.                F008-1
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1. DESCRIPTION: GN AND AFSCN/RTS CONCURRENT SUPPORT TO OTHER USERS

If a station is to support other vehicles in addition to the Orbiter, the capability must be provided to route incoming and outgoing messages to/from the command systems supporting the Orbiter.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/25/90

SUPPLIER: 21 SOPS AGENCY: 501/5 SOPS ()

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/25/90

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[PRD] DATABASE RECORD:      252434      REQUIREMENT STATUS: APPROVED
DOCUMENT ID:                FLT-I        APPROVAL DATE:      04/17/86
                                     INITIAL DATE:      04/17/86
ITEM NUMBER:                T18G        DATE LAST CHANGED:   11/19/02
SECTION:                    2300         TIME LAST CHANGED:   15:53:25

REQUESTER:                  JSC
TEST CODE:                  LATROT        STSALL
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1. DESCRIPTION: TDRSS FORWARD LINK DATA STREAMS

The MCC will generate the Orbiter Time Division Multiplexed uplink and transmit it via the MDM systems to the TDRSS. The MCC can generate simultaneously for any one Orbiter, an S-band uplink (32 or 72 Kb/s) and a Ku-band uplink (72 or 216 Kb/s). Any further coding is to be provided by the TDRSS.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/06/86

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2300 - COMMAND SYSTEMS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 252434
ITEM NUMBER: T18G

[PRD] DATABASE RECORD: 219454 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 07/19/94
INITIAL DATE: 06/06/86
ITEM NUMBER: T20G DATE LAST CHANGED: 11/19/02
SECTION: 2300 TIME LAST CHANGED: 15:53:25

REQUESTER: JSC
TEST CODE: LATROT STSALL

1. DESCRIPTION: SN FORWARD LINK ECHO

Forward link echo is required upon request. A history is required for each forward link stream transmitted to the SN. The echo data source will be:

1. During support periods; a loop-back of the forward link at the SN interface.
2. During validation tests and pre-pass checkouts; the source can be selected to the user S/C simulator (thereby exercising the entire data link, including the satellite).
3. Recording of the echo are required as an aid in fault isolation and validation testing.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/19/94

[PRD] DATABASE RECORD: 227549 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 09/06/02
INITIAL DATE: 04/30/90
ITEM NUMBER: T22G DATE LAST CHANGED: 12/03/02
SECTION: 2300 TIME LAST CHANGED: 15:09:16

REQUESTER: JSC
SUBREQUESTER: JSC/DV
TEST CODE: ALPHSE KSC MIL STSALL

TRACKING NO. F02-08-6 F02-09-3 F308-3 F610-2 F702-6

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2300 - COMMAND SYSTEMS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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CONTINUED

[PRD] DATABASE RECORD: 227549
ITEM NUMBER: T22G

F803-3

1. DESCRIPTION: MIL/PDL/(CORE SITE) T C/V MODE

1. General-Forward Link Data. In the throughput mode, the forward link (Command/Voice Data) to these stations consists of JSC originated 32kb/s or 72kb/s contiguous data serial bit streams. These two bit streams are routed to the JSC Network Devices which will be configured to block these streams and assign a unique data stream ID (PDL support 72kb/s only).

At GSFC, the JSC Command Streams are circuit switched (patched) to the MIL/PDL/WLP stations prime command circuit. The shuttle forward link system reconstructs (debblocks) the contiguous serial data stream for modulation on the RF transmitting system.

When the forward command system needs to be "safed", operator action at JSC will safe the command system while leaving the forward link modulation on. This maintains the air-to-ground voice capability. No site action required. Safing the MCC command system inhibits the uplinking of all commands except the uplink test command.

2. Command Site Status Messages (SSM). Dynamic site status (Revised SSM format) will be provided to JSC when stations are in the throughput mode. The details regarding the structure of the throughput site status messages are included in the Command Section of the JSC/GSFC ICD No. JSC-11534 and Volume 1.

3. Command Forward Link Echo. A real time forward link echo is required from MIL/PDL/WLP for testing validation. The echo consist of the composite forward link data turned around at the RF verification receiver output and sent back and JSC. The Command Echo is blocked and sent to GSFC and message switched to JSC on a unique MDM port. GN station will not be able to provide command echo's and telemetry data simultaneously due to HSDL limitations. The HDR Command Echo/HDR Telemetry data options will be selected by JSC.

4. Command History. A history is required for the active throughput command/voice link. The Command/Voice History Data source will be a

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2300 - COMMAND SYSTEMS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 227549
ITEM NUMBER: T22G

recording of the RF verification receiver output. The recorded history data can be played back and recovered at JSC utilizing the same return techniques as the Command Echo.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/399 MILA PDL
WLP

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/27/02
RESPONSE TRACKING: ZF02-09-2

[PRD] DATABASE RECORD: 8108 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 10/03/96
INITIAL DATE: 03/28/88
ITEM NUMBER: T23GS DATE LAST CHANGED: 11/19/02
SECTION: 2300 TIME LAST CHANGED: 15:53:24

REQUESTER: JSC
SUBREQUESTER: JSC/DV
TEST CODE: ALPHSE
TRACKING NO. F02-08-6 F106-1 F403-3 F510-2 F511-2
F604-2 F610-1

1. DESCRIPTION: 21 SOPS/RTS THROUGHPUT MODE

1. General - Forward Link Data. In the throughput mode, the forward link (Command/Voice Data) to the remote tracking stations (RTS) consists of JSC originated 72kb/s and 32kb/s contiguous data serial bit streams.

At the RTS, the data is stabilized/PCM reformatted from NRZ-L to BI0-L by the de-jitter unit or equivalent unit for ARTS and uplinked to the Orbiter.

2. Command Performance Data Message (PDM). There is no requirement for RTS PDM's.
3. Command Forward Link Echo. Forward link echo is required. The echo data source will be:

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2300 - COMMAND SYSTEMS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 8108
ITEM NUMBER: T23GS

A. During RTS non-support periods; a loop-back of the active forward link at OAS can be sent back via the echo channel to JSC.

B. Echo management will be coordinated/controlled by DICE and Houston Command.

4. Command History - A history is required for the active throughput command/voice link. The command/voice history data source will be a wide band recording of the echo verification receiver output. The recorded command history data can be played back (from the RTS) and recovered at JSC utilizing the same return path as the real time command echo.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/13/96

SUPPLIER: 21 SOPS AGENCY: 501/5 SOPS ()

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/13/96

[PRD] DATABASE RECORD: 8118 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/18/02
INITIAL DATE: 04/13/88
ITEM NUMBER: T24GX DATE LAST CHANGED: 09/22/03
SECTION: 2300 TIME LAST CHANGED: 11:39:33

REQUESTER: JSC
TEST CODE: ALPHSE EAFB STSALL
TRACKING NO. F02-08-6 F02-11-3 F110-2 F301-1 F401-2
F610-3

1. DESCRIPTION: GN AND DFRC THROUGHPUT MODE

1. General - Forward Link Data. In the throughput mode, the forward link (Command/Voice Data) consists of a JSC originated 32 and 72kbps contiguous data serial bit stream. This forward link modulation is routed to the JSC/GSFC Network Devices is circuit switched (patched) which is configured to block the stream and assign a unique data

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2300 - COMMAND SYSTEMS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 8118
ITEM NUMBER: T24GX

stream ID.

At GSFC, the JSC 32 OR 72 kb/s Command system is circuit switched (patched) to the GN stations/DFRC NASCOM 2000 Prime & Backup and also through PTP equipment via IP circuits (Fan-out limit of 3). The stations NCPS systems re-serialize (deblock) the MDM blocked data stream for modulation on the RF transmitting equipment.

2. Command Site Status Message (SSM). Dynamic site status will be provided to JSC when stations are in the throughput mode. The details regarding the structure of the throughput site status message are included in the command section of the JSC/GSFC ICD No. JSC-11534 Volume 1. Command only SSM's are acceptable from the Dryden station.
3. Command Forward Link Echo. A requirement exists for command echo from GN throughput stations/DFRC and consists of the composite forward link data turned around and sent back to JSC. The echo is blocked and sent to GSFC and message switched to JSC on the echo MDM port. GN stations/DFRC will not be able to provide command echo's and telemetry data simultaneously due to HSDL limitations.
- . The HDR Command Echo/HDR Telemetry data option will be selected by JSC. No command Echoc required from Dryden.

TECHNICAL CONTACT: GSFC/451.0/James Bangerter/301-286-7306

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/427

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/22/03

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/18/02

FLS2300.008

PAGE SEQUENCE NUMBER: 107
CLASSIFICATION UNCLASSIFIED

REF UDS R G/A

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2300 - COMMAND SYSTEMS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04
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[PRD] DATABASE RECORD: 520224 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/30/92
INITIAL DATE: 06/30/92
ITEM NUMBER: T25G DATE LAST CHANGED: 11/19/02
SECTION: 2300 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: EMCC EORBIT EOTERY LANDNG
REENTRY STSALL
TRACKING NO. F207-2

1. DESCRIPTION: COMMAND REQUIREMENT (EMCC OPERATION ONLY)

MIL COMMAND REQUIREMENT:

1. Provide multiplexing of the EMCC A/G voice V1 and V2 into the EMCC 72 Kb/s command stream for HDR U/L, or provide multiplexing of the EMCC A/G voice V1 into the EMCC 32 Kb/s command stream for LDR U/L.
2. Provide blocking and encryption of the EMCC 72/32 Kb/s command stream and transmit to GSFC.
3. Deblock 72/32 Kb/s command echo and transmit to the EMCC for command verification.

COORDINATION: JSC/DV/Mike Marsh/281 483-4761

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: MILA

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/09/92

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2700 - COMMUNICATION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD:      357897      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                FLT-I        APPROVAL DATE:      01/05/98
                                   INITIAL DATE:      09/21/89
ITEM NUMBER:                T1G          DATE LAST CHANGED:  11/25/02
SECTION:                    2700         TIME LAST CHANGED:  14:35:35

REQUESTER:                  JSC
TEST CODE:                  ALPHSE        STSALL
TRACKING NO.                F401-2        F801-1
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1. DESCRIPTION: GN S-BAND TLM DATA COMMUNICATIONS

In support of Mission preparation and flight operations,
224 kb/s circuits are required for the transmission of telemetry
data from supporting S-band stations to GSFC. GSFC is required
to receive this data from up to 4 S-band stations simultaneously,
reformat and transmit the data to JSC in a composite data stream
via redundant MDM circuits.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/427

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/12/98

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[PRD] DATABASE RECORD:      262143      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                FLT-I        APPROVAL DATE:      01/05/98
                                   INITIAL DATE:      09/21/89
ITEM NUMBER:                T2G          DATE LAST CHANGED:  11/19/02
SECTION:                    2700         TIME LAST CHANGED:  15:53:25

REQUESTER:                  JSC
TEST CODE:                  ALPHSE        LATROT        STSALL
TRACKING NO.                F801-1
```

1. DESCRIPTION: GN S-BAND COMMAND REQUIREMENTS

GSFC is required to receive MCC generated command data, reformat
and transmit it to supporting S-band stations for uplink to the
Orbiter. Command data will be received from MCC as a composite
data stream on an MDM circuit and message switched by GSFC to
uplinking stations on a 56 or 224 kb/s circuit.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/12/98

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2700 - COMMUNICATION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 262143
ITEM NUMBER: T2G

[PRD] DATABASE RECORD: 267993 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 09/21/89
INITIAL DATE: 09/21/89
ITEM NUMBER: T3G DATE LAST CHANGED: 11/19/02
SECTION: 2700 TIME LAST CHANGED: 15:53:25

REQUESTER: JSC
TEST CODE: ALPHSE STSALL

1. DESCRIPTION: GSFC TO JSC WIDEBAND REQUIREMENTS

Two duplex MDM circuits are required between GSFC and JSC for transmission of telemetry, tracking, command and voice data. The circuits shall have a 2.5 MB capability expandable to 6.0 mb/s. Redundancy is required to be provided via the broadcast mode.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/21/89

[PRD] DATABASE RECORD: 277731 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/07/99
INITIAL DATE: 05/07/91
ITEM NUMBER: T4G DATE LAST CHANGED: 11/19/02
SECTION: 2700 TIME LAST CHANGED: 15:53:25

REQUESTER: JSC
TEST CODE: ALPHSE STSALL
TRACKING NO. F401-2 F402-2 F905-1

1. DESCRIPTION: GN A/G & VOICE REQUIREMENTS

A/G communications and voice coordination between MCC and GSFC will require several voice circuits. S-band stations are required to be configured with a minimum of 3 voice circuits for A/G communications and station coordination activities.

REF: FLS2710, ITEM T1G, DBR 269486

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2700 - COMMUNICATION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 277731
ITEM NUMBER: T4G

SUPPLIER COMMITMENT: WILCO

RESPONSE DATE: 05/07/99

[PRD] DATABASE RECORD: 344157 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 09/21/89
INITIAL DATE: 09/21/89
ITEM NUMBER: T17.5G DATE LAST CHANGED: 11/19/02
SECTION: 2700 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: LATROT STSALL

1. DESCRIPTION: TDRSS DATA COMMUNICATIONS REQUIREMENTS

Two duplex MDM circuits for the transmission of Orbiter and payload downlink/uplink data are required from the WSC to JSC. The primary WBD circuit is to be routed directly from WSC to JSC and the backup circuit diversely routed. The primary and backup WBD circuits shall have a capability expandable to 8.0 Mb/s and will be used for the transmission of telemetry, command, voice and tracking data.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO

RESPONSE DATE: 09/21/89

[PRD] DATABASE RECORD: 346895 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 09/21/89
INITIAL DATE: 09/21/89
ITEM NUMBER: T18G DATE LAST CHANGED: 07/12/02
SECTION: 2700 TIME LAST CHANGED: 12:05:22

REQUESTER: JSC
TEST CODE: LATROT STSALL

1. DESCRIPTION: TDRSS A/G COMMUNICATIONS REQUIREMENTS

Emergency Air-to-Ground (A/G) and station coordination voice communications circuits are required between MCC and the WSC via GSFC.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2700 - COMMUNICATION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 346895
ITEM NUMBER: T18G

REF: FLS2710, ITEM T15G, DBR 378777

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/21/89

[PRD] DATABASE RECORD: 348378 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/20/92
INITIAL DATE: 11/13/91
ITEM NUMBER: HT19G DATE LAST CHANGED: 11/22/02
SECTION: 2700 TIME LAST CHANGED: 11:49:22

REQUESTER: MSFC JSC
SUBREQUESTER: JSC/MT3 TVPLAN
TEST CODE: EORBIT STSALL
TRACKING NO. F110-3 F111-2 F204-3

1. DESCRIPTION: TDRSS TELEVISION REQUIREMENTS

The WSC is required to receive, record and remote Orbiter
real-time RT or PB downlinked TV to MCC. A full - transponder
TV transmission circuit between the WSC and MCC is required.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/22/92

[PRD] DATABASE RECORD: 349835 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/15/95
INITIAL DATE: 01/26/90
ITEM NUMBER: HT20G DATE LAST CHANGED: 11/19/02
SECTION: 2700 TIME LAST CHANGED: 15:53:26

REQUESTER: MSFC JSC
TEST CODE: EORBIT STSALL
TRACKING NO. F505-2

1. DESCRIPTION: TDRSS DATA COMMUNICATIONS REQUIREMENTS

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2700 - COMMUNICATION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 349835
ITEM NUMBER: HT20G

The WSC is required to have the capability of remoting Ku-band
Channel 2, up to 2 MBS and channel 3 data, up to 48 MBS, to MCC and
MSFC via a DOMSAT channel.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/05/95

[PRD] DATABASE RECORD: 350933 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 09/21/89
INITIAL DATE: 09/21/89
ITEM NUMBER: T21G DATE LAST CHANGED: 11/19/02
SECTION: 2700 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: LATROT STSALL

1. DESCRIPTION: TDRSS COMMUNICATIONS REQUIREMENTS

The WSC is required to be capable of recording all return link
data, including tracking data, as protection against communica-
tions outages as follows:

- a. After a communications problem (outage) has been detected.
- B. During mission phases where communications are critical.
- c. Playbacks will be accomplished ASAP after communications
are restored.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/21/89

[PRD] DATABASE RECORD: 349767 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/30/98
INITIAL DATE: 09/21/89
ITEM NUMBER: GHT24G DATE LAST CHANGED: 11/19/02
SECTION: 2700 TIME LAST CHANGED: 15:53:26

REQUESTER: GSFC MSFC JSC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2700 - COMMUNICATION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 349767
ITEM NUMBER: GHT24G

TEST CODE: ALPHSE STSALL
TRACKING NO. F204-3 F803-5

1. DESCRIPTION: JSC AND MSFC STAT MUX

JSC and MSFC require a Statistical Multiplexer system to operate
on the 50 MBPS WSC to MSFC and JSC full transponder circuit.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/30/98

[PRD] DATABASE RECORD: 518991 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 02/28/03
INITIAL DATE: 03/16/92
ITEM NUMBER: GS32G DATE LAST CHANGED: 02/28/03
SECTION: 2700 TIME LAST CHANGED: 15:27:29

REQUESTER: GSFC 21 SOPS
SUBREQUESTER: 21 SOPS
TEST CODE: LATROT STSALL
TRACKING NO. F03-02-2 F203-8

1. DESCRIPTION: 21 SOPS SHUTTLE FLIGHT MONITORING

GSFC is required to send a monitor feed of FD, A/G 1, or A/G 2 to
Onizuka for monitoring flight operations, as required.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/28/03

[PRD] DATABASE RECORD: 520565 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 07/27/92
INITIAL DATE: 07/27/92
ITEM NUMBER: T34G DATE LAST CHANGED: 11/19/02
SECTION: 2700 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2700 - COMMUNICATION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520565
ITEM NUMBER: T34G

TEST CODE: PRPFLT STSALL TVPLAN
TRACKING NO. F207-7

1. DESCRIPTION: TELEVISION CIRCUITS

NISN shall provide two full-period television transponders for support of Shuttle television requirements.

One transponder shall generally be assigned to support Shuttle operations requirements. The operational transponder shall also be capable of processing 4.2 MHz analog data and wideband digital data.

The second transponder shall generally be assigned to support the public release of Shuttle television information. Priorities and configurations of these transponders for Shuttle support shall be delegated by the authority of the JSC Flight Director as delegated to Houston TV and NISN for implementation. Specific configurations for Shuttle support shall be documented in the Mission Specific Television Plan.

REF: LLS 2700 T121G 520567
FLS 2734 HT26EG 513735

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/27/92

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2710 - AIR/GROUND VOICE COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD:      269486      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                FLT-I        APPROVAL DATE:      01/21/94
                                           INITIAL DATE:      04/13/88
ITEM NUMBER:                T1G          DATE LAST CHANGED:  11/25/02
SECTION:                    2710         TIME LAST CHANGED:  14:53:02

REQUESTER:                  JSC
TEST CODE:                  LATROT      STSALL
TRACKING NO.                F106-4      F308-3      F401-2
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1. DESCRIPTION: GN S-BAND A/G VOICE REQUIREMENTS

All GN stations are required to support Shuttle in the throughput mode. Air-to-Ground voice is combined with command on the encrypted forward link (32 Kb/s low data rate, one channel and 72 Kb/s high data rate, two channels).

The GN stations are required to support the return link throughput clear mode, 96 Kb/s low data rate and 192 Kb/s high data rate.

The voice is time - division - multiplexed onboard with 128 Kb/s telemetry, forming 192 Kb/s HDR or with 64 Kb/s telemetry forming 96 Kb/s composite bit stream.

REF: FLS2700, ITEM T4G, DBR 277731

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/399 GSFC/427

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/01/94

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[PRD] DATABASE RECORD:      20773      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                FLT-I        APPROVAL DATE:      02/13/02
                                           INITIAL DATE:      02/06/90
ITEM NUMBER:                T2EGX        DATE LAST CHANGED:  09/04/03
SECTION:                    2710         TIME LAST CHANGED:  10:48:44

REQUESTER:                  JSC
SUBREQUESTER:               JSC/DV      JSC/MG
TEST CODE:                  EAFB        LAEORY      LATROT      STSALL

TRACKING NO.                F002-1      F008-1      F01-05-1      F02-02-1      F211-1
                           F301-1      F401-2      F601-1      F605-1      F803-2
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CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2710 - AIR/GROUND VOICE COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 20773
ITEM NUMBER: T2EGX

F803-2A F803-3

1. DESCRIPTION: GN/DFRC/WSSH/WLP - UHF A/G VOICE REQUIREMENTS

The Orbiter will be configured with two UHF channels for normal simplex operations, and a third ATC UHF simplex channel for use during contingencies. Support facilities are required to relay uplink and downlink analog voice between JSC and the Orbiter on the designated UHF link (259.7/296.8/243.0 MHz) as directed by JSC. The ATC (243.0 MHz) is a contingency channel on the International Distress Frequency. DFRC/WSSH/MIL/WLP will support all frequencies with remote E&M type keying and filtering and are required during all phases of the mission, and contingencies as directed by JSC. PDL UHF will be used during Orbiter ascent due to plume attenuation.

TECHNICAL CONTACTS: JSC/TA/J. Aquino/281 483-4033
GSFC/451.0/James Bangerter/301 286-7306

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: WSMR

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 04/19/02
RESPONSE: WILCO for QUINDAR only, WSMR is not equipped with E&M keying.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/427 GSFC1155

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 10/25/02
RESPONSE: NOWILCO for GN E&M; some GN sites cannot support E&M keying. Further investigation is continuing.

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2710 - AIR/GROUND VOICE COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 20773
ITEM NUMBER: T2EGX

SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/03/02

[PRD] DATABASE RECORD: 365442 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/24/03
INITIAL DATE: 04/27/90
ITEM NUMBER: G6EGS DATE LAST CHANGED: 03/12/04
SECTION: 2710 TIME LAST CHANGED: 09:43:50

REQUESTER: GSFC
SUBREQUESTER: 21SOPS
TEST CODE: EAFB ER PREFLT STSALL

TRACKING NO. F008-1 F03-06-5 F301-1 F406-2 F905-1

1. DESCRIPTION: GN AIR-TO-GROUND VERIFICATION TESTING

Prior to each mission, applicable stations are required to support
A/G verification testing in the following manner:

1. Throughput/ Modified Throughput stations configure for keying
and modulation on UHF A/G.
2. Maintain a capability to send and receive simulated audio
tones through the system and measure audio frequencies dur-
ing the testing process.
3. Confirm proper operation of the UHF systems when interfaced with
the GSFC NIC.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: EAFB ER WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/24/03

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/24/03

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2710 - AIR/GROUND VOICE COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 365442
ITEM NUMBER: G6EGS

SUPPLIER: 21 SOPS AGENCY: 21 SOPS (21 SPACE OPERATIONS SQUADRON (21 S)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/24/03

[PRD] DATABASE RECORD: 208004 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/30/03
INITIAL DATE: 01/12/87
ITEM NUMBER: T8G DATE LAST CHANGED: 06/04/03
SECTION: 2710 TIME LAST CHANGED: 12:28:46

REQUESTER: JSC
SUBREQUESTER: JSC/DO
TEST CODE: LAEORB PREFLT STSALL
TRACKING NO. F005-2 F02-11-2 F03-04-3

1. DESCRIPTION: ORBITAL COMMUNICATION ADAPTER (OCA)

The Orbital Communications Adapter (OCA) will be used for message exchange and 2-way videoconferencing with the crew. This system nominally uses the Ku-Band command system for uplink and Ku-Band channel2 or 3 for downlink.

The OCA-Modem will be used when the Ku-Band system is not available. Modem circuitry on the OCA rev-0 card utilizes an S-Band A/G channel via AGVE AVS (uplink and downlink) to communicate with an onboard laptop computer in which OCA rev-0 card is installed.

TECHNICAL CONTACT: Fisher Reynolds/JSC/DO/281 244-1172

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/20/03

FLS2710.004 PAGE SEQUENCE NUMBER: 119 REF UDS R G/A
CLASSIFICATION UNCLASSIFIED

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2710 - AIR/GROUND VOICE COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD:      378777      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                FLT-I        APPROVAL DATE:      06/09/03
                                     INITIAL DATE:      06/17/91
ITEM NUMBER:                T15G         DATE LAST CHANGED:  06/11/03
SECTION:                    2710         TIME LAST CHANGED:  09:41:13

REQUESTER:                  JSC
TEST CODE:                  LATROT      STSALL
TRACKING NO.                F03-06-1    F106-4
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1. DESCRIPTION: EMERGENCY A/G VOICE REQUIREMENTS VIA SN

An emergency air-to-ground voice capability is required at SN WSC. In the event the digital interfaces become inoperable, emergency voice communications must be established with the Orbiter crew. A single two-way A/G voice capability selectable via S-band or Ku-band is required. The S-band configuration must be compatible with high or low data rates (72 or 32 kb/s forward and 192 or 96 kb/s return); the Ku-band configuration is required to be only compatible with the high data rate modes (72 or 216 kb/s forward and 192 kb/s return). The interface to this capability will be analog voice from a local source or from the MCC. The uplink requires the availability of encryption and down linked decryption capability for all flights.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/11/03

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[PRD] DATABASE RECORD:      226324      REQUIREMENT STATUS: APPROVED
DOCUMENT ID:                FLT-I        APPROVAL DATE:      09/01/83
                                     INITIAL DATE:      09/01/83
ITEM NUMBER:                T16G         DATE LAST CHANGED:  07/03/02
SECTION:                    2710         TIME LAST CHANGED:  08:04:45

REQUESTER:                  JSC
TEST CODE:                  EORBIT      STSALL
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1. DESCRIPTION: SN A/G VOICE REQUIREMENTS

The SN is required to provide simultaneous support of S-band and Ku-band system.

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2710 - AIR/GROUND VOICE COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 226324
ITEM NUMBER: T16G

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/24/84

[PRD] DATABASE RECORD: 227248 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/17/91
INITIAL DATE: 06/17/91
ITEM NUMBER: T18G DATE LAST CHANGED: 12/03/02
SECTION: 2710 TIME LAST CHANGED: 15:04:24

REQUESTER: JSC
TEST CODE: EORBIT STSALL
TRACKING NO. F106-4

1. DESCRIPTION: SN A/G VOICE MONITORING REQUIREMENTS

WSC is requested to demodulate, decrypt and monitor if necessary
S-band and Ku-band return links for trouble isolation.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/25/91

[PRD] DATABASE RECORD: 520230 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 07/19/94
INITIAL DATE: 06/30/92
ITEM NUMBER: T19GX DATE LAST CHANGED: 11/19/02
SECTION: 2710 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: EMCC EORBIT EOTERY LANDNG
REENTRY STSALL
TRACKING NO. F207-2 F302-2

1. DESCRIPTION: UHF A/G REQUIREMENT (EMCC OPERATION ONLY)

The Orbiter will be configured with two UHF channels for normal
operations and a third ATC UHF channel for use during contingencies.
Support facilities are required to relay uplink and downlink analog
voice between KSC/via MIL and the Orbiter on the designated UHF link
(259.7/296.8 MHz) as directed by EMCC GC.
The Air Traffic Control Channel(243.0 MHz) is a contingency channel

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2710 - AIR/GROUND VOICE COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520230
ITEM NUMBER: T19GX

on the International Distress Frequency. GN, DFRC and WSSH support
of this frequency is required during contingencies as directed by
EMCC GC.

COORDINATION: JSC/DV/Mike Marsh/281 483-4761

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: MILA

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/19/94

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/16/94

[PRD] DATABASE RECORD: 576595 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/08/04
INITIAL DATE: 06/04/04
ITEM NUMBER: T24GX DATE LAST CHANGED: 07/26/04
SECTION: 2710 TIME LAST CHANGED: 09:26:19

REQUESTER: JSC
TEST CODE: DFRC LAULDG MILA PDL
PRPFLY STSALL WLPS WSSH

TRACKING NO. F04-06-1

1. DESCRIPTION: BACKUP AIR-TO-GROUND UHF

GSFC/GN AND DFRC ARE TO PROVIDE A BACKUP UHF CIRCUIT WITH KEYING
CAPABILITY FOR LAUNCH AND LANDING.

REF: T164G SECTION 2750 DBR 576596
T164.1X SECTION 2750 DBR 576596

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/23/04

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2710 - AIR/GROUND VOICE COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 576595
ITEM NUMBER: T24GX

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/09/04

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 228523 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 12/17/03
INITIAL DATE: 04/05/88
ITEM NUMBER: T1G DATE LAST CHANGED: 01/20/04
SECTION: 2730 TIME LAST CHANGED: 10:20:51

REQUESTER: JSC
SUBREQUESTER: JSC/MT3 TVPLAN
TEST CODE: ALPHSE DDMS EAFB ER
MIL STSALL WSSH
TRACKING NO. F006-1 F02-09-1 F02-09-1A F03-02-1 F03-12-1
F203-4 F205-2 F207-6 F501-4 F503-1
F702-2 F801-1

1. DESCRIPTION: VOICE LINES

Provide the following voice lines as outlined below:

REF	TYPE OF SERVICE	FROM	TO	REMARKS
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T1.1	DUPLEX	GSFC	JSC	98 Voice Circuits: 12 Multiplex Satellite 86 Multiplex Terrestrial
T1.2	DUPLEX	KSC	JSC	87 Voice Circuits: 17 Multiplex Satellite 70 Multiplex Terrestrial
T1.3	DUPLEX	DFRC	JSC	28 Voice Circuits: 10 Multiplex Satellite 18 Multiplex Terrestrial
T1.4	DUPLEX	MSFC	JSC	25 Voice Circuits: 01 Multiplex Satellite 22 Multiplex Terrestrial
T1.5	DUPLEX	NORAD	JSC	1 Voice Circuit: 01 Multiplex Terrestrial
T1.6	DUPLEX ALTERNATE	JSC	DAHLGREN	1 Voice Circuit: 01 Multiplex Terrestrial (Diverse Route)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 228523
ITEM NUMBER: T1G

T1.7 DUPLEX JSC JPL 7 Voice Circuits:
07 Multiplex Terrestrial

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/17/03

[PRD] DATABASE RECORD: 360240 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 02/18/99
INITIAL DATE: 03/29/88
ITEM NUMBER: T3EGT DATE LAST CHANGED: 11/19/02
SECTION: 2730 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: 30 SPW ALPHSE EAFB ER
STSALL WSSH
TRACKING NO. 903-2 F008-1

1. DESCRIPTION: VOICE LINES

Provide the following voice lines as outlined below:

REF	TYPE OF SERVICE	FROM	TO	REMARKS
T3.1	DUPLEX 3 CKTS	ER	WR	RCO Coord, Comm Order Wire, Track Coord.
T3.2	DUPLEX 2 CKTS	WR	AFFTC	RCO Coord, Track Coord,
T3.3	DUPLEX	GSFC	WSMR	Track Coord. This circuit extended to JSC on existing GSFC - JSC facilities.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: EAFB ER WR
WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/18/99

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 360240
ITEM NUMBER: T3EGT

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 03/11/99
RESPONSE: GSFC-WSMR circuit provided by NISN (others by DoD).

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/18/99

[PRD] DATABASE RECORD: 254446 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/22/01
INITIAL DATE: 03/07/90
ITEM NUMBER: E6EG DATE LAST CHANGED: 11/19/02
SECTION: 2730 TIME LAST CHANGED: 15:53:25

REQUESTER: ER
TEST CODE: ALPHSE ER STSALL WSSH

TRACKING NO. F008-1 F01-05-1 F404-1 F903-2

1. DESCRIPTION: VOICE LINES

Provide the following voice lines as outlined below:

REF	TYPE OF SERVICE	FROM	TO	REMARKS
E1.1	DUPLEX 2 CKTS	ER	WLP	Track Coord. Diversely routed.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/22/01

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 254446
 ITEM NUMBER: E6EG

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/05/01

[PRD] DATABASE RECORD: 266278 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 09/27/02
 INITIAL DATE: 03/29/88
 ITEM NUMBER: H7G DATE LAST CHANGED: 01/20/04
 SECTION: 2730 TIME LAST CHANGED: 10:21:29

REQUESTER: MSFC
 TEST CODE: ALPHSE STSALL
 TRACKING NO. F02-09-5

1. DESCRIPTION: VOICE LINES

Provide the following voice service as outlined below:

REF	TYPE OF SERVICE	FROM	TO	REMARKS
H7	DUPLEX 4 CKTS	GSFC	MSFC	

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/16/03

[PRD] DATABASE RECORD: 272846 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 09/27/02
 INITIAL DATE: 10/28/87
 ITEM NUMBER: H8GT DATE LAST CHANGED: 01/20/04
 SECTION: 2730 TIME LAST CHANGED: 10:22:01

REQUESTER: MSFC
 SUBREQUESTER: JSC/MT3
 TEST CODE: ALPHSE STSALL TVPLAN
 TRACKING NO. F02-09-5

1. DESCRIPTION: VOICE LINES

Provide the following voice service as outlined below:

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 272846
ITEM NUMBER: H8GT

REF	TYPES OF SERVICE	FROM	TO	REMARKS
T1	DUPLEX 4 CKTS	MSFC	JSC	
T2	DUPLEX 19 CKTS	JSC	MSFC	

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/06/03

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/27/02

[PRD] DATABASE RECORD:	12373	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	07/26/04
		INITIAL DATE:	03/29/88
ITEM NUMBER:	T9GK	DATE LAST CHANGED:	07/26/04
SECTION:	2730	TIME LAST CHANGED:	11:43:38

REQUESTER: JSC
SUBREQUESTER: JSC/MT3
TEST CODE: ALPHSE EAFB STSALL TVPLAN

TRACKING NO.	F01-10-2	F02-09-4	F03-08-2	F04-07-1	F103-3
	F310-1	F310-1A	F801-1	F801-3	F802-1
	F802-1A				

1. DESCRIPTION: MISSION AUDIO VIA SATELLITE
RESPONSIBLE AGENCY: GSFC

Provide an unprotected, half-duplex, 15 KHZ point-to-multipoint, broad-cast quality, AMC-6 satellite transmission for Mission Audio. This requirement is for continuous (24 hour/day) service with origin at JSC and receive-only capability at GSFC, KSC, MSFC, DFRC, and JPL. JSC has a receive back monitor.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 12373
ITEM NUMBER: T9GK

GSFC will extend this circuit on a 3KHz voice grade circuit to WSSH via WSC.

NOTE: To ensure audio continuity to the media, Mission Audio should accompany video. During STDN TV passes Transponder 9 is used to remote Orbiter TV to JSC.

When Transponder 9 is used the Kennedy Space Center (KSC) Tech Control will leave 2ICM591 (KSC's Mission Audio) from KSC News Facility configured to Transponder 9 for the duration of all SSP missions in support of the MILA passes.

The above configuration applies only when Transponder 9 is used at MILA.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/26/04
RESPONSE TRACKING: Z104-2

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: TA-B2 USK-102

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 07/26/04
RESPONSE TRACKING: ZFR6801 ZFR8901 ZFR9001- ZR6101

[PRD] DATABASE RECORD: 520260 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/30/03
INITIAL DATE: 07/10/92
ITEM NUMBER: T14EGKX DATE LAST CHANGED: 03/11/04
SECTION: 2730 TIME LAST CHANGED: 13:33:45

REQUESTER: JSC
SUBREQUESTER: I-PH-B3
TEST CODE: EMCC EORBIT EOTERY LANDNG
REENTRY STSALL
TRACKING NO. F03-10-2 F207-4 F903-2

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520260
ITEM NUMBER: T14EGKX

1. DESCRIPTION: EMCC VOICE CIRCUIT REQUIREMENT (EMCC OPERATION ONLY)

Provide voice circuit capability to support a Emergency Mission
Control Center (EMCC) at KSC. Circuit requirements are listed below:

VOICE CONFERENCE : E : K : C : M : G : G : G : : S : W : W : D : :
: M : S : A : I : S : S : S : : T : S : S : F : :
: C : C : P : L : F : F : F : : A : C : M : R : :
: C : : E : : C : C : C : : T : : R : C : :
: : C : : : : : : : E : : : : :
: K : D : X : : N : M : G : : : : W : : :
: S : S : Y : : A : S : N : : D : : S : : :
: C : C : : : S : C : : : E : : S : : :
: : : : : C : : : : P : : H : : :
: : : : : O : : : : T : : : : :
: : : : : M : : : : : : : : : :

A/G-1 :TM :TM : :TM*:TM :TM : : : :TM : : : :
A/G-2 :TM :TM : :TM*:TM :TM : : : :TM : : : :
A/G UHF :TM :TM : :TM*:TM :TM :TM : : :TM#:TM :TM : :
Prime Ops :TM :TM :TM~: :TM :TM : : : :TM : : : :

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520260
ITEM NUMBER: T14EGKX

Site/TN Coord	:TM :TM :TM~:TM :TM :TM :TM :	: : :TM#:TM :TM : :
GC/NOM	:TM :TM : :TM*:TM :TM : :	: : :TM : : : :
Track Coord	:TM :TM :TM~:TM*:TM :TM :TM :	: : : :TM :TM : :
L/F Prime 1	:TM :TM :TM~: :TM : : : :	: : :TM#:TM :TM : :
L/F Prime 2	:TM :TM : :TM*:TM : : : :	: : :TM#:TM :TM : :
DDMS Coord	:TM :TM :TM~: :TM :TM : : : :	: : :TM#:TM :TM : :
Convoy Cmdr Net	:TM :TM :TM~: :TM : : : :	: : :TM#:TM :TM : :
Cooling Net	:TM :TM :TM~: :TM : : : :	: : :TM#:TM :TM : :
WSSH WX Aircraft	:TM :TM : :TM*:TM : M : : : :	: : :TM#:TM : : : :
DFRC WX Aircraft	:TM :TM : :TM*:TM : M : : : :	: : : :TM : : :
State Department	:TM :TM :TM~: :TM : : : :	: : : :TM : : : :
FAA/ATC	:TM :TM : : : : : : : :	: : : : : : :
LRD Net	:TM :TM :TM~: :TM :TM : : : :	: : :TM#:TM :TM : :
Mission Comm Coord	:TM :TM :TM~:TM :TM : : : :	: : :TM#:TM :TM : :
Purge Net	: :TM :TM~: :TM : : : :	: : :TM#:TM :TM : :
Flight Director	:TM :TM :TM~: M :TM : M : : : :	: : M#: M : M : :

NOTE: (*) Denotes circuits routed between GSFC and KSC/EMCC via MIL and KSC CD&SC. Some of these circuits are also required at MIL for their shuttle support.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520260
ITEM NUMBER: T14EGKX

(~) Denotes circuits routed between GSFC and KSC/EMCC via CCAS
X-Y Comm Bldg and KSC/CD&SC. Some of these circuits are also
required at KSC and MIL for their shuttle support.

(#) Denotes circuits routed between GSFC and WSMR/WSSH via WSC.
Some of these circuits are also required at WSC for their
shuttle support.

GSFC NISN will route circuits to other required shuttle support
locations. (i.e. WSC, DFRC, GSFC, NIC etc.)

COORDINATION: JSC/DV/M.Marsh/281 483-4761

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/30/03

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/06/03

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: CSOC-102 IT-D2

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 03/30/03
RESPONSE: KSC WILCO is for terminations only at KSC CDSC and for KSC
extensions to EMCC KSC, CAPE XY, and/or MIL as required.

RESPONSE TRACKING: ZFR4703 ZR9601

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/30/03

FLS2730.009 PAGE SEQUENCE NUMBER: 132 REF UDS R 228
CLASSIFICATION UNCLASSIFIED

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD:      523218      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                FLT-I        APPROVAL DATE:      05/26/93
                                           INITIAL DATE:      05/26/93
ITEM NUMBER:                G16GT        DATE LAST CHANGED:  09/03/02
SECTION:                    2730         TIME LAST CHANGED:  09:12:51

REQUESTER:                  GSFC
TEST CODE:                  ALPHSE        STSALL
TRACKING NO.                F305-2
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1. DESCRIPTION: VOICE CIRCUIT FOR CAS I/F - CAS COORD

Provide a voice circuit for the Customer Ancillary Service(CAS) workstation operators at both JSC and GSFC. The CAS Coord configurations will be procedurally controlled by the GSFC as required to be extended for CAS support.

SUPPLIER: GSFC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/26/93

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/26/93

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[PRD] DATABASE RECORD:      530528      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                FLT-I        APPROVAL DATE:      07/07/95
                                           INITIAL DATE:      07/03/95
ITEM NUMBER:                T30EGK        DATE LAST CHANGED:  11/26/02
SECTION:                    2730         TIME LAST CHANGED:  10:38:17

REQUESTER:                  JSC
TEST CODE:                  INFO          LATROT        STSALL
TRACKING NO.                F507-1
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1. DESCRIPTION: WSSH VOICE REQUIREMENTS

NISN will make the following general set of circuitry available between KSC/JSC and White Sands Missile Range Comm in WSMR Bldg 300 from launch minus 18 hours thru any required landing support.

There are 13 circuits available and circuit assignment may vary depending on the specific mission requirements.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 530528
ITEM NUMBER: T30EGK

A/G 1
A/G UHF
Comm Orderwire
Convoy Commander
DDMS Coord
Flight Director
Landing Field Prime 1
Landing Field Prime 2
Mission Audio
Site Coord
SSPO
Surgeon
Track Coord

These circuits can be augmented by additional circuits within 15 minutes of notification of a landing.

All circuits required for a turnaround can be provided within 72 hours of a landing.

SUPPLIER: ER AGENCY: 45 RANS/DOU (45TH SPACE WING)
SUBSUPPLIER: WSMR

SUPPLIER COMMITMENT: INFO RESPONSE DATE: 07/07/95

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: INFO RESPONSE DATE: 07/07/95

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: TA-B2 USK-102

SUPPLIER COMMITMENT: INFO WILL COMMIT RESPONSE DATE: 07/23/97

FLS2730.011 PAGE SEQUENCE NUMBER: 134 REF UDS R 228
CLASSIFICATION UNCLASSIFIED

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 544753 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/22/98
INITIAL DATE: 04/22/98
ITEM NUMBER: T32G DATE LAST CHANGED: 03/05/03
SECTION: 2730 TIME LAST CHANGED: 08:43:49

REQUESTER: JSC
SUBREQUESTER: JSC/DM
TEST CODE: ALPHASE
TRACKING NO. F804-3

1. DESCRIPTION: NORAD ALTERNATE VOICE CIRCUIT

NISN is to provide one (1) full duplex, 4 wire voice circuit with Type
one (1) E&M signaling between the JSC MCC and the NORAD Alternate
Space Control Center in Dahlgren, Va.

REF: T152G FLS2750 DBR 544754

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 02/12/03
RESPONSE:

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2732 - TELETYPE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

===== =
[PRD] DATABASE RECORD: 344485 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 07/23/97
INITIAL DATE: 03/07/90
ITEM NUMBER: T1G DATE LAST CHANGED: 11/19/02
SECTION: 2732 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: ALPHSE EAFB MIL STSALL

TRACKING NO. F403-3 F707-2 F707-4

1. DESCRIPTION: TELETYPE CIRCUITS

Provide the following teletype circuits as outlined below:

REF	TYPE OF SERVICE	FROM	TO	REMARKS
----	-----	----	----	-----
T1.1	DUPLEX	GN/SN	GSFC	Dual channel. Operations messages, C-band tracking data, S-band tracking data. These circuits, between GSFC and STDN, will be extended to JSC on existing GSFC-JSC circuits.
T1.2	DUPLEX	21SOPS	GSFC	Operations Messages, Site Config. Messages, ACQ data, IRV's.
T1.3	DUPLEX 2 CKTS	GSFC	DFRC	Operations Messages, C-Band tracking data, ACQ data.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/863

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/23/97

[PRD] DATABASE RECORD: 366953 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 02/18/99
INITIAL DATE: 03/29/88
ITEM NUMBER: T3EG DATE LAST CHANGED: 11/26/02
SECTION: 2732 TIME LAST CHANGED: 10:48:35

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2732 - TELETYPE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 366953
ITEM NUMBER: T3EG

REQUESTER:	JSC				
TEST CODE:	30 SPW	ALPHSE	EAFB	ER	
	MK98	STSALL			
TRACKING NO.	707-4	F008-1	F707-2	F709-1	F903-2

1. DESCRIPTION: TELETYPE CIRCUITS

Provide the following teletype circuits as outlined below:

REF	TYPE OF SERVICE	FROM	TO	REMARKS
----	-----	----	----	-----
T3.1	DUPLEX 6 CKTS	WR	GSFC	Single channel. Operations Messages, IRV's, C-band track data, ACQ data.
T3.2	DUPLEX 4 CKTS	ER	GSFC	Operations Messages, IRV's C-band track data, ACQ data.
T3.3	DUPLEX	GSFC	AFFTC	Operations Messages, ACQ data.
T3.4	DUPLEX 2 CKTS	GSFC	DFRC	Operations Messages, C-Band tracking data, ACQ data.

NOTE: REF: T3.1 and T3.2 - These TTY circuits are multiplexed on a single 1200 baud circuit.

RATIONALE: Mandatory - For maintenance of circuitry between WR/GSFC, ER/GSFC, GSFC/AFFTC, and GSFC/DFRC.

SUPPLIER: ER	AGENCY: 45RANS/DOS	()
SUBSUPPLIER: EAFB	ER		WR	

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/18/99

SUPPLIER: GSFC	AGENCY: GSFC/451	(GODDARD SPACE FLIGHT CENTER)
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SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/11/99

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2732 - TELETYPE NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 366953
 ITEM NUMBER: T3EG

[PRD] DATABASE RECORD: 399742 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 02/18/99
 INITIAL DATE: 03/29/88
 ITEM NUMBER: E5G DATE LAST CHANGED: 11/19/02
 SECTION: 2732 TIME LAST CHANGED: 15:53:26

REQUESTER: ER
 TEST CODE: ALPHSE ER STSALL WSSH

TRACKING NO. F903-2

1. DESCRIPTION: TELETYPE CIRCUITS

Provide the following teletype circuits as outlined below:

REF	TYPE OF SERVICE	FROM	TO	REMARKS
E5.1	DUPLEX 1200 BAUD	ER	GSFC	Operations Messages.
E5.2	SIMPLEX 1200 BAUD	GSFC	WSMR	ACQ Data (WSSH and MTL INP's).

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/17/01

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD:      220480      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                FLT-I        APPROVAL DATE:      09/06/02
                                     INITIAL DATE:      03/07/90
ITEM NUMBER:                T1GK        DATE LAST CHANGED:  11/26/02
SECTION:                    2734        TIME LAST CHANGED:  10:49:09

REQUESTER:                  JSC
SUBREQUESTER:               JSC/MT3
TEST CODE:                  ALPHSE      STSALL      TVPLAN
TRACKING NO.                F02-09-3    F403-3      F801-1
```

1. DESCRIPTION: ORBITAL TELEVISION

Provide television circuits as outlined below, using full transponder 5. Half Duplex.

REF	TYPE OF SERVICE	FROM	TO	REMARKS
T1.1	Television	WSC	JSC/GSFC	Ref.: 2780, T4G, DBR 355185
T1.2	Television	MIL via KSC/CDSC	JSC/GSFC	Ref.: 2780, T1G, DBR 340886

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/27/02
RESPONSE TRACKING: ZF02-09-2

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 09/06/02

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[PRD] DATABASE RECORD:      233753      REQUIREMENT STATUS: APPROVED
DOCUMENT ID:                FLT-I        APPROVAL DATE:      02/22/90
                                     INITIAL DATE:      02/22/90
ITEM NUMBER:                T2G        DATE LAST CHANGED:  11/22/02
SECTION:                    2734        TIME LAST CHANGED:  11:49:22

REQUESTER:                  JSC
SUBREQUESTER:               JSC/MT3
TEST CODE:                  ALPHSE      EAFB      STSALL      TVPALN
```

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 233753
 ITEM NUMBER: T2G

1. DESCRIPTION: NASA RELEASE TELEVISION - ORBITAL TV

Provide television circuits as outlined below, using full transponder. All transmitting stations have downlink receive capability when any other center is uplinking. Half duplex.

REF	TYPE OF SERVICE	FROM	TO	REMARKS
T2.1	Television	JSC	KSC/DFRC GSFC (HQS)	Ref.: L&L 2780, T7. Non-real-time release due to conflict with T1.2, T1.3, & T1.4.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/21/89

[PRD] DATABASE RECORD:	251037	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	06/30/98
ITEM NUMBER:	T5EGK	INITIAL DATE:	02/22/90
SECTION:	2734	DATE LAST CHANGED:	08/03/04
		TIME LAST CHANGED:	11:16:38

REQUESTER: JSC
 SUBREQUESTER: JSC/MT3
 TEST CODE: ALPHSE MIL MK98 STSALL

TRACKING NO.	F008-1 F806-1	F308-1	F403-3	F801-1	F803-3
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1. DESCRIPTION: HIGH-SPEED DATA CIRCUITS

Provide High-speed data circuits as outlined below.

REF	TYPE OF SERVICE	FROM	TO	REMARKS
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CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 251037
 ITEM NUMBER: T5EGK

T5.1	9.6KBPS DUPLEX	STDN	GSFC	S-Band. MIL
T5.2	9.6KBPS DUPLEX	JSC	KSC	JSC SPF and KSC Orbiter onboard S/W support.
T5.3	75 BAUD DUPLEX	KSC	JSC	Timing (75 BPS)
T5.4	2.4KBPS 2 CKTS DUPLEX	WLP	ER	C-band, Acq data bus, LTAS data on backside of data circuit.

RATIONALE: Required - For maintenance of high-speed circuits between
 STDN/GSFC, JSC/KSC, KSC/JSC, and WLP/ER.*
 * Mandatroy - Requirement becomes mandatory for loss of IMU or
 NAVAID redundancy.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
 SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/22/98

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/02/98

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
 SUBSUPPLIER: I-PZ-C2 KICS-109

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/01/98

RESPONSE TRACKING: ZFR5102 ZFR8901 ZFR9002 ZFR9501 ZR5901

FLS2734.003 PAGE SEQUENCE NUMBER: 141 REF UDS R 228
 CLASSIFICATION UNCLASSIFIED

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD:      278216      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                FLT-I        APPROVAL DATE:      05/22/01
                                           INITIAL DATE:      03/29/88
ITEM NUMBER:                E8G          DATE LAST CHANGED:  11/19/02
SECTION:                    2734         TIME LAST CHANGED:  15:53:25

REQUESTER:                  ER
TEST CODE:                  ALPHSE      ER      MIL      STSALL
                           WSSH
TRACKING NO.                F01-05-1    F903-2
```

1. DESCRIPTION: HIGH-SPEED DATA CIRCUITS

Provide High-speed data circuits as outlined below:

REF	TYPES OF SERVICE	FROM	TO	REMARKS
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E8.1	2.4KBPS HALF DUPLEX	MIL	ER	Range Safety, Telemetry. Backup circuit used for range safety, tracking or telemetry data.
E8.2	2.4KBPS DUPLEX 2 CKTS	ER	WLP	Range Safety, Command

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/05/01

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[PRD] DATABASE RECORD:      297557      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                FLT-I        APPROVAL DATE:      04/03/98
                                           INITIAL DATE:      02/22/90
ITEM NUMBER:                G9EG          DATE LAST CHANGED:  11/19/02
SECTION:                    2734         TIME LAST CHANGED:  15:53:25

REQUESTER:                  GSFC
TEST CODE:                  ER      MIL      STSALL
TRACKING NO.                F008-1    F803-5    F804-1
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CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 297557
ITEM NUMBER: G9EG

1. DESCRIPTION: HIGH-SPEED DATA CIRCUITS

Provide High-speed data circuits as outlined below:

REF	TYPE OF SERVICE	FROM	TO	REMARKS
G9.1	2.4KBPS HALF DUPLEX	ER	MIL	LTAS, Acq data bus.
G9.2	2.4KBPS HALF DUPLEX	MIL	ER	S-band, RSO Telemetry
G9.3	2.4KBPS HALF DUPLEX	ER	GSFC	LTAS, Acq data bus.

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/14/98

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

[PRD] DATABASE RECORD: 9974 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/09/95
INITIAL DATE: 03/29/88
ITEM NUMBER: E13G DATE LAST CHANGED: 11/19/02
SECTION: 2734 TIME LAST CHANGED: 15:53:24

REQUESTER: ER
TEST CODE: ALPHSE ER STSALL
TRACKING NO. F105-13 F404-1 F404-1A F506-3

1. DESCRIPTION: WIDEBAND DATA CIRCUITS

Provide wideband data circuits as outlined below:

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 9974
ITEM NUMBER: E13G

REF	TYPE OF SERVICE	FROM	TO	REMARKS
E13.1	56KBPS	GSFC	ER	For transmission of JSC ICV to CCC.

REF: ITEM T118E LLS2700 DBR 514993
T29E FLS2700 DBR 015692

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/09/95

[PRD] DATABASE RECORD: 513735 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 07/26/04
INITIAL DATE: 11/14/91
ITEM NUMBER: HT26EGKX DATE LAST CHANGED: 07/29/04
SECTION: 2734 TIME LAST CHANGED: 12:54:03

REQUESTER: MSFC JSC
SUBREQUESTER: F111-3
TEST CODE: EORBIT STSALL TVPLAN
TRACKING NO. F03-08-2 F04-07-1 F102-3 F103-2 F111-3
F111-7 F112-1 F206-10 F206-3 F206-5
F207-7 F801-2 F802-1

1. DESCRIPTION: TELEVISION TRANSPONDER SUPPORT FOR SHUTTLE FLIGHTS

Control and scheduling of Satellite AMC-6 Transponder 5 and Transponder 9 are a function of NISN. During Shuttle flights, operational control of these transponders is delegated to Houston TV who acts on behalf of the Flight Director.

General use of these transponders is as follows:

LAUNCH

Transponder 5 - multiplexed video from KSC to support operational needs of the Marshall ICE team and the JSC MER.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 513735
ITEM NUMBER: HT26EGKX

Transponder 9 - support of launch coverage for Public Affairs Office (PAO) and operations as NASA Select.

ON-ORBIT:

Transponder 5 - support of Shuttle TDRSS wideband data and television downlink.

Transponder 9 - support of PAO as NASA Select. Also used for transmission of the S-Band downlinked video from MIL to JSC.

LANDING:

Transponder 5 - support of operational television requirements of the MER for post-flight documentation of Orbiter condition.

Transponder 9 - support of operational and PAO coverage of landing from acquisition through crew egress.

TRANSPONDER AUDIO CHANNELS:

Transponder 9 - has two audio channels one for program audio and the other for timing data associated with tape replays.

Transponder 5 - has one audio channel for timing data during tape replays.

TRANSPONER UPLINK/DOWNLINK CAPABILITIES

SITE	TRANSPONDER 9		TRANSPONDER 5	
	UPLINK/DOWNLINK		UPLINK/DOWNLINK	
KSC/MILA	X	X	X	X
MSFC	X	X	X	X
JSC	X	X	X	X
GSFC	X	X		X
WSC	X	X	X	X
DFRC	X	X		X

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 513735
ITEM NUMBER: HT26EGKX

NOTE: 1. Depending on flight real-time requirements and PAO special events, priorities and configurations may change and are to be coordinated through Houston TV and GSFC NISN. Generally, transponder 9 will be used for "public access" and will normally carry NASA Select television. Transponder 5 is designated for operational use.

REF: LLS 2734 HT33EG 514040
FLS 2700 T34G 520565

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: WR

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 07/26/04

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 07/26/04
RESPONSE: This transponder is shared with Landsat project.

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 07/26/04

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/29/04

[PRD] DATABASE RECORD: 523223 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/26/93
INITIAL DATE: 05/26/93
ITEM NUMBER: G31GT DATE LAST CHANGED: 11/19/02
SECTION: 2734 TIME LAST CHANGED: 15:53:26

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 523223
ITEM NUMBER: G31GT

REQUESTER: GSFC
TEST CODE: ALPHSE STSALL
TRACKING NO. F305-2

1. DESCRIPTION: CAS DATA CIRCUIT

Provide wide band data circuit for transmission of Customer
Ancillary Service (CAS) data, between GSFC and JSC.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/26/93

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/26/93

[PRD] DATABASE RECORD: 533508 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/31/96
INITIAL DATE: 05/31/96
ITEM NUMBER: ET37G DATE LAST CHANGED: 12/03/02
SECTION: 2734 TIME LAST CHANGED: 14:56:30

REQUESTER: ER JSC
SUBREQUESTER: JSC/DM4
TEST CODE: LAUNCH
TRACKING NO. F605-2

1. DESCRIPTION: REMOTE ROCC ABORT COMMAND

GSFC is to provide two (2) diverse, terrestrially routed full duplex
9.6Kbps circuits for Abort Commanding from the Range Operations
Control Center (ROCC). The circuits are to be RS-232 asynchronous
from the Rocc FCO console to Houston MCC.

CONTACTS: Mike Campbell/45SW/SE/321 494-5101
Greg Oliver/JSC/DM4/281 483-1921

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 533508
ITEM NUMBER: ET37G

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/06/96

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 357619 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 09/30/02
INITIAL DATE: 06/15/90
ITEM NUMBER: GKTY3.2G DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:26

REQUESTER: GSFC KSC JSC
NASA HQ
SUBREQUESTER: PZ-A3
TEST CODE: CKT3 EAFB ER LATROT
MIL STSALL
TRACKING NO. F02-04-1 F02-06-2 F02-09-5 F204-6 F306-2
F405-2 F804-1

1. DESCRIPTION: AIR-TO-GROUND-1 (A/G-1)V1
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
G1		M	2	GSFC/GN for distribution
Y2		M		Extend to NASA HQS for Distribution
K3		M	1	Extend to KSC/CDSC for Distribution
G4		M		Extend to 21 SOPS
G5		M		Extend to WSC
G6		M		Extend to WSMR/WSSH via WSC

NOTE: 1. A/G-1 monitor capability via MIL/KSC/CDSC on "GSFC GCN-1"
through Landing rollout.
2. Configure to talk mode upon request by Houston Comm Tech.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

[PRD] DATABASE RECORD: 393011 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 10/03/02
INITIAL DATE: 06/15/90
ITEM NUMBER: GKTX4.2G DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:26

REQUESTER: GSFC KSC JSC
DFRC NASA HQ
SUBREQUESTER: PZ-A3
TEST CODE: CKT4 EAFB LATROT MIL
STSALL WSSH

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 393011
ITEM NUMBER: GKTX4.2G

TRACKING NO. F02-06-2 F02-09-5 F204-6 F306-2 F804-1

1. DESCRIPTION: AIR-TO-GROUND-2 (A/G-2)V2
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
G1		M		GSFC for distribution
K2		T	1	Extend to KSC/CDSC for Distribution
Y3		M		Extend to NASA HQS for Distribution
G4		M		Extend to WSC/WSMR
G5		M		Extend to 21 SOPS

NOTE: 1. A/G-2 monitor capability via MIL/KSC/CDSC on "GSFC GCN-3"
through Landing rollout.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02
RESPONSE TRACKING: Z02-10-1

[PRD] DATABASE RECORD: 520830 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 08/27/92
INITIAL DATE: 08/27/92
ITEM NUMBER: T6.6G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 11:15:21

REQUESTER: JSC
TEST CODE: CKT6 EMCC FULL-TIME STSALL

TRACKING NO. F208-3

1. DESCRIPTION: DDMS COORINATION (DDMS COORD)

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
T1	T		Extend to DFRC
T2	T		Extend to WSMR (If Required)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520830
ITEM NUMBER: T6.6G

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/08/92

[PRD] DATABASE RECORD: 293685 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/02/03
INITIAL DATE: 06/15/90
ITEM NUMBER: GTY12.2G DATE LAST CHANGED: 05/22/03
SECTION: 2750 TIME LAST CHANGED: 13:12:45

REQUESTER: GSFC JSC NASA HQ
TEST CODE: CKT12 EMCC LATROT STSALL

TRACKING NO. F02-06-2 F03-05-1 F306-2

1. DESCRIPTION: FLIGHT DIRECTOR (FD)
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
G1		M		GSFC for distribution
Y2		M		Extend to NASA HQS for Distribution
G3		M	1	Extend to WSC/WSMR
G4		M		Extend to 21 SOPS
G5		M		Extend to WLPS
G6		M		Extend to State Dept

NOTE: Extend to WSMR in talk mode if designated as a Landing site.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/20/03

[PRD] DATABASE RECORD: 253386 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 10/03/02
INITIAL DATE: 10/24/84
ITEM NUMBER: T13.1G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 11:25:22

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 253386
ITEM NUMBER: T13.1G

REQUESTER: JSC
TEST CODE: ALPHSE CKT13 EMCC FULL-TIME
STSALL
TRACKING NO. F02-06-2 F208-3

1. DESCRIPTION: GROUND CONTROLLER/NETWORK OPERATIONS
MANAGER (GC/NOM)
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T		GSFC/MSC distribution
T2		T		Extend to JSC
T3		T	1	Extend to KSC/CDSC
T4		T		Extend to WSC

NOTE: 1. This circuit will be activated for EMCC support.
REF: T14EGKX FLS2730 DBR 520260

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

[PRD] DATABASE RECORD:	520856	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	04/03/98
		INITIAL DATE:	09/01/92
ITEM NUMBER:	T13.3G	DATE LAST CHANGED:	02/12/04
SECTION:	2750	TIME LAST CHANGED:	11:26:43

REQUESTER: JSC
TEST CODE: CKT13 EMCC FULL-TIME STSALL
TRACKING NO. F208-3 F804-1

1. DESCRIPTION: GROUND CONTROLLER /NETWORK OPERATIONS MANAGER
(GC/NOM) (EMCC OPERATION ONLY)

RESPONSIBLE AGENCY: GSFC/MIL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520856
 ITEM NUMBER: T13.3G

REF	CAP	NOTE	TERMINATION LOCATION
T1	T	1	EXTEND TO KSC/CDSC

NOTE: 1. This circuit will be activated for EMCC support.
 REF: T14EGKX FLS 2730 DBR 520260

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

[PRD] DATABASE RECORD: 317954 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 10/03/02
 INITIAL DATE: 10/24/84
 ITEM NUMBER: GT14.1G DATE LAST CHANGED: 02/12/04
 SECTION: 2750 TIME LAST CHANGED: 11:27:41

REQUESTER: GSFC JSC
 TEST CODE: ALPHSE CKT14 FULL-TIME STSALL

TRACKING NO. F02-06-2

1. DESCRIPTION: GSFC COMMUNICATIONS MANAGER (GSFC COMM MGR)
 RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
G1		T		GSFC/MSD distribution
T2		T		Extend to JSC
G3		T		Extend to NISN distribution

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04
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[PRD] DATABASE RECORD: 321190 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 10/03/02
INITIAL DATE: 03/30/88
ITEM NUMBER: GKT15.1GT DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 11:28:28

REQUESTER: GSFC KSC JSC
TEST CODE: ALPHSE CKT15 ER FULL-TIME
STSALL
TRACKING NO. F02-06-2 F203-8 F804-1

1. DESCRIPTION: GSFC ORBIT DETERMINATION FACILITY (GSFC ODF) COORD
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T		GSFC distribution
T2		T		GSFC FDF console
K3		T		Extend to KSC/CDSC
G4		M		GSFC MSC
T5		T		Extend to JSC/MCC Distribution

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

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[PRD] DATABASE RECORD: 278097 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 10/24/84
INITIAL DATE: 10/24/84
ITEM NUMBER: T18.3G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 11:32:08

REQUESTER: JSC
TEST CODE: ALPHSE CKT18 FULL-TIME MIL
STSALL

1. DESCRIPTION: JSC/MIL ORDER WIRE (JSC/MIL O/W)
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
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CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 278097
ITEM NUMBER: T18.3G

T1 T Terminate at MIL (from KSC/CDSC)

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/24/84

[PRD] DATABASE RECORD: 519714 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/24/02
INITIAL DATE: 04/14/92
ITEM NUMBER: KT19.7G DATE LAST CHANGED: 05/01/03
SECTION: 2750 TIME LAST CHANGED: 14:24:35

REQUESTER: KSC JSC
SUBREQUESTER: PZ-A3
TEST CODE: ALPHSE CKT19 EMCC STSALL

TRACKING NO. F02-06-2 F204-2 F204-9 F208-3 F309-1
F309-1A FSRR4901

1. DESCRIPTION: LANDING FIELD PRIME 1

RESPONSIBLE AGENCY: GSFC

REF:	TEST CODE	CAP	NOTE	TERMINATION LOCATION
KT1		T	1,2	GSFC EXTEND TO WSMR via WSC.
T2		T	2	EXTEND TO DFRC/EAFB
K3		T	2	EXTEND TO KSC/CDSC

NOTE: 1. This circuit will be conferenced with KSC and DFRC/EAFB
by Houston Voice Controller. REF: DKT19.1T, 2750
DBR 279607.
2. This circuit will be activated for EMCC support.

REF: T1K FLS 3020 DBR 520264
T1.1EK FLS 3020 DBR 520265

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 519714
ITEM NUMBER: KT19.7G

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

[PRD] DATABASE RECORD: 401428 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/03/98
INITIAL DATE: 08/27/92
ITEM NUMBER: GT20.5G DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:26

REQUESTER: GSFC JSC
TEST CODE: CKT20 EMCC STSALL
TRACKING NO. F208-3 F309-1 F804-1

1. DESCRIPTION: LANDING FIELD - PRIME-2 (L/F PR-2)
(EMCC OPERATION ONLY)
RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
T1	T	1	Extend to DFRC
T2	T	1	Extend to WSMR VIA WSC (If required)
G3	T	1	KSC/CDSC extend to GSFC

NOTE: 1. This circuit will be activated for EMCC support.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

[PRD] DATABASE RECORD: 316183 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/06/02
INITIAL DATE: 10/24/84
ITEM NUMBER: T22.2G DATE LAST CHANGED: 10/03/02
SECTION: 2750 TIME LAST CHANGED: 16:23:12

REQUESTER: JSC
TEST CODE: ALPHSE CKT22 MIL STSALL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 316183
ITEM NUMBER: T22.2G

TRACKING NO. F02-06-2 F204-1

1. DESCRIPTION: MIL AIR-TO-GROUND (UHF B/U)
RESPONSIBLE AGENCY: GSFC/MIL

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		M	1	Extend to KSC/CDSC
T2		M	1	MIL for uplink to SSO

NOTE: 1. MILA is in monitor mode until required by JSC for talk mode.

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

[PRD] DATABASE RECORD:	362169	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	10/03/02
		INITIAL DATE:	03/08/90
ITEM NUMBER:	ET23.6G	DATE LAST CHANGED:	02/12/04
SECTION:	2750	TIME LAST CHANGED:	11:35:48

REQUESTER: ER JSC
SUBREQUESTER: JSC/MT3
TEST CODE: 30 SPW ALPHSE CKT23 EAFB
FULL-TIME STSALL TVPLAN
TRACKING NO. F02-06-2 F203-11 F306-2 F405-2

1. DESCRIPTION: MISSION AUDIO
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		M		GSFC distribution
T2		M		GSFC MSC
T3		M		GSFC, BLDG 8-N2, Call Dir.
T4		M		GSFC, Bldg 8-N4, Call Dir.
E5		M		Extend WR via JPL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 362169
ITEM NUMBER: ET23.6G

T6 M Extend to State Dept.
T7 M Extend to WSC

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

[PRD] DATABASE RECORD: 520844 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/29/02
INITIAL DATE: 08/28/92
ITEM NUMBER: T24.7G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 12:13:29

REQUESTER: JSC
TEST CODE: CKT24 EMCC FULL-TIME STSALL

TRACKING NO. F02-06-2 F208-3

1. DESCRIPTION: MISSION COMMUNICATIONS COORDINATION
(MSN COMM COORD)
RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
T1	T	1	EXTEND TO DFRC
T2	T	1,2	EXTEND TO WSSH via WSC
T3	T	1	EXTEND TO WSMR, BLDG 300

NOTE: 1. When required this circuit will be activated for EMCC support.
2. WSC/WSSH configured when JSC combines the Mission Comm Coord/ WSMR Comm Coord at L-30 through completion of mission.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04
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[PRD] DATABASE RECORD: 22718 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/29/02
INITIAL DATE: 08/24/90
ITEM NUMBER: T25.2G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 12:14:35

REQUESTER: JSC
TEST CODE: ALPHSE CKT25 FULL-TIME STSALL

TRACKING NO. F008-4 F009-2 F02-06-2 F203-8

1. DESCRIPTION: VIDEO OPERATIONS (VIDEO OPS)

RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T		Term FOB-6, Room 6036
T2		T		Term FOB-6, Room 6025
T3		T		GSFC, Bldg 8 N2, Call Director
T4		T		GSFC, Bldg 8 N4, Call Director

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

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[PRD] DATABASE RECORD: 326172 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/29/02
INITIAL DATE: 04/05/88
ITEM NUMBER: Y28.4G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 12:21:37

REQUESTER: NASA HQ
SUBREQUESTER: JSC/MT3
TEST CODE: ALPHSE CKT28 FULL-TIME STSALL
TVPLAN
TRACKING NO. F02-06-2 F306-2

1. DESCRIPTION: PUBLIC AFFAIRS OFFICE COORDINATION (PAO COORD)

RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
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CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 326172
ITEM NUMBER: Y28.4G

Y1	T	GSFC Voice for distribution
Y2	T	GSFC Bldg. 8, PAO Office Suite, 2 positions
Y3	T	GSFC Bldg. 88, Visitor Cntr. News Facility
Y4	T	NASA HQ for Distribution

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

[PRD] DATABASE RECORD:	355797	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	05/29/02
		INITIAL DATE:	03/30/88
ITEM NUMBER:	GTY29.4G	DATE LAST CHANGED:	02/12/04
SECTION:	2750	TIME LAST CHANGED:	13:10:43

REQUESTER:	GSFC	JSC	NASA HQ
SUBREQUESTER:	JSC/MT3		
TEST CODE:	ALPHSE	CKT29	FULL-TIME STSALL
	TVPLAN		
TRACKING NO.	F02-06-2	F306-2	

1. DESCRIPTION: PUBLIC AFFAIRS OFFICE CUE (PAO CUE)
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T		GSFC for distribution
Y2		T		Extend to NASA HQS for Distribution
T3		T		GSFC, Bldg 8-N2, Call Dir.
T4		T		GSFC, Bldg 8-N4, Call Dir.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

FLS2750.012 PAGE SEQUENCE NUMBER: 160 REF UDS NR 225
CLASSIFICATION UNCLASSIFIED

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 276383 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 10/03/02
INITIAL DATE: 01/17/90
ITEM NUMBER: GHKTX45.1G DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:25

REQUESTER: GSFC MSFC KSC
JSC DFRC
TEST CODE: 30 SPW ALPHSE CKT45 EAFB
EMCC ER MIL STSALL

TRACKING NO. F02-06-2 F203-8 F208-3 F301-1 F301-3
F308-2 F310-2 F310-2A F804-1 F901-14

1. DESCRIPTION: SITE COORDINATION (SITE COORD)
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
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T1		T		GSFC for distribution
T2		T		Extend to JSC
T3		T		GSFC MSC
T4		T		Extend to CCAS X-Y via CDSC
G5		M		Extend to KSC/CDSC for distribution
H6		M		Extend to MSFC Comm Bldg. 4207 for Dist.
T7		T		Extend to WSMR via WSC
T8		T		Extend to GN
G9		T		Extend to WSC
T10		T		Extend to DFRC

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

[PRD] DATABASE RECORD: 17643 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 02/10/89
INITIAL DATE: 02/10/89
ITEM NUMBER: H45.6GH DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:25

REQUESTER: MSFC
SUBREQUESTER: MSFC/EO32
TEST CODE: ALPHSE CKT45 STSALL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 17643
 ITEM NUMBER: H45.6GH

TRACKING NO. F901-14

1. DESCRIPTION: SITE COORDINATION (SITE COORD)

RESPONSIBLE AGENCY: MSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
H1		M		COMM Bldg. 4207 for Dist.
H2		M		MSFC OPS, MSFC Data and COMM Control, Bldg. 4663

TECHNICAL CONTACT: MSFC/FD43/NELDA HILEY/256 544-5774
 GSFC/450/T.SOBCHAK/301 286-7813

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/15/89

SUPPLIER: MSFC AGENCY: MSFC/FD43 (MARSHALL SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/18/90

[PRD] DATABASE RECORD:	327892	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	01/08/03
		INITIAL DATE:	01/17/90
ITEM NUMBER:	YT46.3G	DATE LAST CHANGED:	01/16/03
SECTION:	2750	TIME LAST CHANGED:	09:04:13

REQUESTER: NASA HQ JSC
 TEST CODE: CKT46 LATROT STSALL
 TRACKING NO. F03-01-1 F306-2

1. DESCRIPTION: SPACE SHUTTLE PROGRAM OFFICE (SSPO)
 RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
Y1		M		Extend to NASA HQ for Distribution

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 327892
ITEM NUMBER: YT46.3G

G1 T Extend to WSMR via WSC

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/14/03

[PRD] DATABASE RECORD: 371737 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/03/98
INITIAL DATE: 10/25/84
ITEM NUMBER: T48.2G DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: ALPHSE CKT48 EMCC STSALL

TRACKING NO. F208-3 F804-1

1. DESCRIPTION: STATE DEPARTMENT INTERFACE
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T		Extend to State Department
T2		T	1	Extend to CCAS-XY via KSC/CDSC

NOTE: 1. This circuit will be activated for EMCC support.
REF: T14EGKX FLS2730 DBR 520260

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

[PRD] DATABASE RECORD: 386479 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/07/02
INITIAL DATE: 04/07/88
ITEM NUMBER: T49.5G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 13:19:46

REQUESTER: JSC
SUBREQUESTER: JSC/MT3

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 386479
 ITEM NUMBER: T49.5G

TEST CODE: ALPHSE CKT49 FULL-TIME STSALL
 TVPLAN
 TRACKING NO. F02-06-2 F804-1

1. DESCRIPTION: SUPPORT AUDIO
 RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T	1	GSFC Voice for test and troubleshooting
T2		T	1	NASA Headquarters 300 E St. SW, TV Control Room.
T3		T		GSFC Voice for extension to press conference area as required.

NOTE: 1. Common carrier provides a bridge on this circuit so both GSFC and NASA HQ have access.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

[PRD] DATABASE RECORD: 563252 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 05/30/02
 INITIAL DATE: 05/30/02
 ITEM NUMBER: T50.5G DATE LAST CHANGED: 10/03/02
 SECTION: 2750 TIME LAST CHANGED: 16:29:13

REQUESTER: JSC
 TEST CODE: ALPHSE CKT50 STSALL
 TRACKING NO. F02-06-2

1. DESCRIPTION: SURGEON
 RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
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CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 563252
ITEM NUMBER: T50.5G

T1 T Extend to WSC/WSMR

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

[PRD] DATABASE RECORD: 392453 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/22/03
INITIAL DATE: 03/30/88
ITEM NUMBER: T51.3G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 13:21:09

REQUESTER: JSC
SUBREQUESTER: JSC/MT3
TEST CODE: ALPHSE CKT51 EAFB FULL-TIME
MIL STSALL TVPLAN
TRACKING NO. F02-06-2 F02-11-5 F03-05-2 F203-11 F301-3
F306-2 F409-7 F801-1 F804-1

1. DESCRIPTION: TELEVISION CONFERENCE (TV CONF)
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T		GSFC FOR DISTRIBUTION
T2		T	1	EXTEND TO GSFC GE EARTH STATION
T3		T		EXTEND TO KSC/CDSC
T4		T		MIL EXTEND TO KSC CDSC
T5		T	1	EXTEND TO MSFC FOR DISTRIBUTION INCLUDING GE AMERICAN EARTH STATION
T6		T		EXTEND TO WSC
T7		T		EXTEND TO DFRC
T8		M		EXTEND TO NASA HQS for Distribution
T9		T		EXTEND TO WR (when required)
T10		T		EXTEND TO JPL

NOTE: 1.Extend circuits to Earth Station providing Shuttle
TV via four wire voice circuits terminating at the
Earth Station on a desk or wall instrument (whichever

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 392453
ITEM NUMBER: T51.3G

stations manager desires) with a push-to-talk switch,
and monitor speaker muting when PTT switch is activated.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/05/03

[PRD] DATABASE RECORD: 315566 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 10/03/02
INITIAL DATE: 06/08/88
ITEM NUMBER: GT52.1G DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:25

REQUESTER: GSFC JSC
TEST CODE: ALPHSE CKT52 EMCC ER
MIL STSALL WSSH
TRACKING NO. F01-05-1 F02-06-2 F208-3 F308-2

1. DESCRIPTION: TRACKING COORDINATION (TRACK COORD)
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
G1		T		Extend to KSC/CDSC
T2		T		GSFC/Goddard OPS
T3		T		WFC Radar Net (FPS-16/FPQ-6)
G4		T		GSFC MSC
T5		T		Extend to JSC
T6		T	2	Extend to DFRC
T9		T	1,2	Extend to WSMR via WSC

NOTE: 1. NISN/DOD communications facilities are utilized
as appropriate.
2. This circuit will be activated for EMCC support.
REF: T14EGKX FLS2730 DBR 520260

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/03/02

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 315566
ITEM NUMBER: GT52.1G

[PRD] DATABASE RECORD: 358500 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 09/01/92
INITIAL DATE: 02/15/85
ITEM NUMBER: T58.2G DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: ALPHSE CKT58 EMCC MIL
STSALL
TRACKING NO. F204-1 F208-3

1. DESCRIPTION: JSC/MIL AIR-TO-GROUND 1
RESPONSIBLE AGENCY: GSFC/MIL

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T	1,2	Extend to KSC Comm. Tech.
T2		T		MIL for distribution

NOTE: 1. This circuit will be monitor feed after SRB ignition until
MIL LOS, via Houston Comm Tech.

2. This circuit will be activated for EMCC support.

REF: T14EGKX FLS2730 DBR 520260
T1K FLS3020 DBR 520264
T1.1EK FLS3020 DBR 520265

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/01/92

[PRD] DATABASE RECORD: 363483 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 09/01/92
INITIAL DATE: 02/15/85
ITEM NUMBER: T59.2G DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: ALPHSE CKT59 EMCC MIL
STSALL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 363483
 ITEM NUMBER: T59.2G

TRACKING NO. F204-1 F208-3

1. DESCRIPTION: JSC/MIL AIR-TO-GROUND 2
 RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T	1,2	Extend to KSC/CDSC
T2		T		MIL for distribution

NOTE:1. This circuit will be configured monitor at SRB ignition
 until MIL LOS, via Houston Comm Tech.
 2. This circuit will be activated for EMCC support,
 REF: T14EGKX FLS2730 DBR 520260
 T1K FLS3020 DBR 520264
 T1.1EK FLS3020 DBR 520265

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/08/92

[PRD] DATABASE RECORD: 4507 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 09/30/02
 INITIAL DATE: 09/30/85
 ITEM NUMBER: T60.2G DATE LAST CHANGED: 06/09/03
 SECTION: 2750 TIME LAST CHANGED: 12:10:24

REQUESTER: JSC
 TEST CODE: ALPHSE CKT60 MIL STSALL

TRACKING NO. F02-09-5 F204-1

1. DESCRIPTION: JSC/MIL AIR-TO-GROUND 3
 RESPONSIBLE AGENCY: GSFC/MIL

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T	1,2	Ext. to KSC
T2		T		MIL for distribution

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 4507
ITEM NUMBER: T60.2G

NOTE: 1. This circuit will be configured in monitor mode at SRB
ignition until MIL LOS, via Houston Comm Tech.
2. This circuit will be activated for EMCC support,
REF: T14EGKX FLS2730 DBR 520560
T1K FLS3020 DBR 520264
T1.1EK FLS3020 DBR 520265

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/08/02

[PRD] DATABASE RECORD: 4511 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 09/30/02
INITIAL DATE: 10/01/85
ITEM NUMBER: T61.2G DATE LAST CHANGED: 10/08/02
SECTION: 2750 TIME LAST CHANGED: 09:57:34

REQUESTER: JSC
TEST CODE: ALPHSE CKT61 MIL STSALL

TRACKING NO. F02/09/5 F204-1

1. DESCRIPTION: JSC/MIL AIR-TO-GROUND 4
RESPONSIBLE AGENCY: GSFC/MIL

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T	1,2	Extend to KSC
T2		T		MIL for distribution

NOTE: 1. This circuit will be configured in monitor mode at SRB
ignition until MIL LOS, via Houston Comm Tech.
2. This circuit will be activated for EMCC support,
REF: T14EGKX FLS2730 DBR 520260
T1K FLS3020 DBR 520264
T1.1EK FLS3020 DBR 520265

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 4511
ITEM NUMBER: T61.2G

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/08/02

[PRD] DATABASE RECORD: 518926 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/04/92
INITIAL DATE: 03/04/92
ITEM NUMBER: TGS63.1GS DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC GSFC 21 SOPS
TEST CODE: CKT63 LATROT STSALL
TRACKING NO. F203-3

1. DESCRIPTION: SHUTTLE SUPPORT COORD

Responsible Agency: 21SOPS

REF:	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T		21SOPS FOR DISTRIBUTION

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/04/92

SUPPLIER: 21 SOPS AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/04/92

[PRD] DATABASE RECORD: 518927 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 07/23/02
INITIAL DATE: 03/04/92
ITEM NUMBER: TGS63.2G DATE LAST CHANGED: 03/21/03
SECTION: 2750 TIME LAST CHANGED: 14:02:07

REQUESTER: JSC GSFC 21 SOPS
TEST CODE: CKT63 LATROT STSALL
TRACKING NO. F203-3

1. DESCRIPTION: SHUTTLE SUPPORT COORD

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 518927
ITEM NUMBER: TGS63.2G

Responsible Agency: GSFC

REF:	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T		GSFC For Distribution
G2		T		Extend to 21 SOPS

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03

[PRD] DATABASE RECORD: 16069 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/03/98
INITIAL DATE: 03/08/90
ITEM NUMBER: GHT65G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 13:22:59

REQUESTER: GSFC MSFC JSC
SUBREQUESTER: JSC/DV
TEST CODE: ALPHSE CKT65 FULL-TIME STSALL

TRACKING NO. F404-1

1. DESCRIPTION: MDM COORD
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
G1		T		Extend to WSC
T2		T		Extend to JSC
H3		T		Extend to MSFC (4207) for Distribution

TECHNICAL CONTACTS: MSFC/FD43/N.HILEY/256 544-5774
JSC/DV/K. JONES/281 483-7671

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 518959 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 09/25/00
INITIAL DATE: 03/05/92
ITEM NUMBER: TX70GT DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 13:23:18

REQUESTER: JSC DFRC
TEST CODE: ALPHSE CKT70 FULL-TIME STSALL

TRACKING NO. F009-1 F203-7

1. DESCRIPTION: DFRC COMMUNICATION COORDINATION:
(DFRC COMM COORD)

RESPONSIBLE AGENCY: JSC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
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T1		T		MCC FOR DISTRIBUTION
T2		T	1	EXTEND TO DFRC

NOTE 1. This loop is configured to the Mission Comm Coord during Shuttle operations from L-30 until after Post Landing operations are complete.

REF: ITEM TKX24.3T SECTION FLS2750 DBR 248690

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/28/00

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/25/00

===== =
[PRD] DATABASE RECORD: 563525 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 07/23/02
INITIAL DATE:
ITEM NUMBER: T111.1G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 13:25:00

REQUESTER: JSC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 563525
 ITEM NUMBER: T111.1G

TEST CODE: ALPHSE CKT111 FULL-TIME STSALL

1. DESCRIPTION: WSMR COMMUNICATION COORD (WSMR COMM COORD)
 RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
T1	T	1	Extend to WSC/WSMR

NOTE: 1. This loop will be combined with Mission Comm Coord during shuttle operations from L-30 until after post landing operations are complete.

REF: ITEM T24.7G SECTION FLS2750 DBR 520844

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/14/03

[PRD] DATABASE RECORD:	20783	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	09/01/92
		INITIAL DATE:	03/09/90
ITEM NUMBER:	T127.1G	DATE LAST CHANGED:	11/19/02
SECTION:	2750	TIME LAST CHANGED:	15:53:25

REQUESTER: JSC
 TEST CODE: ALPHSE CKT127 EMCC STSALL

TRACKING NO. F208-3

1. DESCRIPTION: SN CONFERENCE
 RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		T		NCC for Distribution
T2		T		Extend to WSC
T3		T	1	Extend to CAPE-XY

NOTE: 1. This circuit will be activated for EMCC support.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 20783
ITEM NUMBER: T127.1G

REF: T14EGKX FLS2730 DBR 520260

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 11/19/92
RESPONSE:

[PRD] DATABASE RECORD: 516763 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/16/92
INITIAL DATE: 08/30/91
ITEM NUMBER: K135G DATE LAST CHANGED: 07/16/02
SECTION: 2750 TIME LAST CHANGED: 15:33:04

REQUESTER: KSC
SUBREQUESTER: PZ-C1
TEST CODE: CKT135 LATROT STSALL TAL

TRACKING NO. F108-1 F203-8

1. DESCRIPTION: VOICE/DATA CIRCUITS

CIRCUIT TITLE: INMARSAT COORD (SIGNALING REQUIRED)

RESPONSIBLE AGENCY: GSFC CAP

1. EXTEND TO INMARSAT ES, SOUTHBURY, CT. T
2. EXTEND TO KSC CDSC T

NOTE: THIS CIRCUIT WILL BE ACTIVATED AS NEEDED FOR
CHECKOUTS AND ALS/ELS LANDINGS.

REF: LLS2750, ITEM K180.1G, DBR 013787

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/160

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/16/92

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 516763
 ITEM NUMBER: K135G

[PRD] DATABASE RECORD: 516765 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 07/23/02
 INITIAL DATE: 08/30/91
 ITEM NUMBER: KT136G DATE LAST CHANGED: 03/21/03
 SECTION: 2750 TIME LAST CHANGED: 14:02:45

REQUESTER: KSC JSC
 SUBREQUESTER: PZ-C1
 TEST CODE: CKT136 LATROT STSALL TAL

TRACKING NO. F108-1 F203-8 F205-2

1. DESCRIPTION: VOICE/DATA CIRCUITS

CIRCUIT TITLE: TAL AIRCRAFT/ORBITER

RESPONSIBLE AGENCY: GSFC

CAP

Extend to KSC
 Extend to INMARSAT ES, Southbury,CT.

T
 T

THIS CIRCUIT WILL BE ACTIVATED AS NEEDED FOR CHECKOUTS
 ALS/ELS LANDINGS.

REF: LLS2750, ITEM KT179.1G, DBR 013793
 LLS2700, ITEM DKT82DEK, DBR 013802

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
 SUBSUPPLIER: GSFC/160

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03

[PRD] DATABASE RECORD: 516772 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 05/19/92
 INITIAL DATE: 08/30/91
 ITEM NUMBER: KT137.1G DATE LAST CHANGED: 11/19/02
 SECTION: 2750 TIME LAST CHANGED: 10:49:59

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 516772
ITEM NUMBER: KT137.1G

REQUESTER: KSC JSC
SUBREQUESTER: I-PH-B3 PZ-C1
TEST CODE: CKT137 LATROT STSALL TAL

TRACKING NO. F108-1 F203-8 F205-2

1. DESCRIPTION: VOICE/DATA CIRCUITS

CIRCUIT TITLE: TAL WEATHER OBSERVER

RESPONSIBLE AGENCY: GSFC

CAP

Extend to KSC

T

Extend to INMARSAT ES, Southbury,CT.

T

THIS CIRCUIT WILL BE ACTIVATED AS NEEDED FOR CHECKOUTS
AND ALS/ELS LANDINGS.

NOTE: POST LANDING, THIS CIRCUIT WILL BE USED TO EXTEND
THE LOCAL TAL SITE "GROUND OPS" CIRCUIT TO KSC.

REF: LLS2750, ITEM KT178.1G, DBR 013800
LLS2700, ITEM DKT82DEK, DBR 013802

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/160

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/19/92

[PRD] DATABASE RECORD: 516760 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 05/19/92
INITIAL DATE: 08/30/91
ITEM NUMBER: KT138.1G DATE LAST CHANGED: 07/23/02
SECTION: 2750 TIME LAST CHANGED: 14:41:56

REQUESTER: KSC JSC
SUBREQUESTER: PZ-C1
TEST CODE: CKT138 LATROT STSALL TAL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 516760
ITEM NUMBER: KT138.1G

TRACKING NO. F108-1 F203-8 F205-2

1. DESCRIPTION: VOICE/DATA CIRCUITS

CIRCUIT TITLE: TAL LANDING FIELD

RESPONSIBLE AGENCY: GSFC

CAP

Extend to KSC

T

Extend to INMARSAT ES, Southbury,CT

T

THIS CIRCUIT WILL BE ACTIVATED AS NEEDED FOR CHECKOUTS
AND ALS/ELS LANDINGS.

REF: LLS2750, ITEM KT177.1G, DBR 013759
LLS2700, ITEM DKT82DEK, DBR 013802

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/160

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 05/19/92

[PRD] DATABASE RECORD: 519781 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/05/03
INITIAL DATE: 04/20/92
ITEM NUMBER: T140.1G DATE LAST CHANGED: 03/05/03
SECTION: 2750 TIME LAST CHANGED: 15:17:25

REQUESTER: JSC
TEST CODE: ALPHSE CKT140 EMCC STSALL

TRACKING NO. F02-09-5 F204-3

1. DESCRIPTION: AIR-TO-GROUND UHF

RESPONSIBLE AGENCY: GSFC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 519781
 ITEM NUMBER: T140.1G

REF:	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		M		GSFC DISTRIBUTION
T2		M	1	EXTEND TO MIL
T3		M		EXTEND TO WSC
T5		M	1	EXTEND TO WSMR/WSSH
				SALINA PEAK via WSC
T6		M	1	EXTEND TO WLP

NOTE: 1. Configure talk mode when required by JSC.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/05/03

[PRD] DATABASE RECORD: 519784 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 09/30/02
 INITIAL DATE: 04/20/92
 ITEM NUMBER: T140.4G DATE LAST CHANGED: 03/21/03
 SECTION: 2750 TIME LAST CHANGED: 14:03:13

REQUESTER: JSC
 TEST CODE: ALPHSE CKT140 EMCC STSALL

TRACKING NO. F02-09-5 F204-3 F804-1

1. DESCRIPTION: AIR-TO-GROUND UHF

RESPONSIBLE AGENCY: GSFC/MIL

REF:	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1		M	1	MIL DISTRIBUTION
T2		M	1	EXTEND TO KSC/CDSC

NOTE: 1. Configure talk mode when required by JSC.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 519784
ITEM NUMBER: T140.4G

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/18/03

[PRD] DATABASE RECORD: 520831 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/03/98
INITIAL DATE: 08/27/92
ITEM NUMBER: T141G DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: CKT141 EMCC STSALL
TRACKING NO. F208-3 F804-1

1. DESCRIPTION: PRIME OPS (EMCC OPEARTION ONLY)

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
T1	T		EXTEND TO CCAS XY VIA KSC/CDSC

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

[PRD] DATABASE RECORD: 520835 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/03/98
INITIAL DATE: 08/27/92
ITEM NUMBER: T142.1G DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: CKT142 EMCC STSALL
TRACKING NO. F208-3 F804-1

1. DESCRIPTION: COOLING NET (EMCC OPERATION ONLY)

RESPONSIBLE AGENCY: GSFC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520835
 ITEM NUMBER: T142.1G

REF	CAP	NOTE	TERMINATION LOCATION
T1	T		EXTEND TO DFRC
T2	T		EXTEND TO WSMR VIA WSC (If Required)

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

[PRD] DATABASE RECORD: 520840 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 08/28/92
 INITIAL DATE: 08/28/92
 ITEM NUMBER: T143.1G DATE LAST CHANGED: 11/19/02
 SECTION: 2750 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
 TEST CODE: CKT143 EMCC STSALL
 TRACKING NO. F208-3

1. DESCRIPTION: LANDING RECOVERY DIRECTOR (EMCC OPERATION ONLY)

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
T1	T		MIL OPS SUPERVISOR
T2	T		EXTEND TO WSMR via WSC
T3	T		EXTEND TO DFRC
T4	T		MIL EXTEND TO GSFC FOR DIST TO THE NETWORK DIR, NCC BLDG 3/14 AT LANDING MINUS 90 MIN.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/08/92

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD:	520843	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	08/28/92
		INITIAL DATE:	08/28/92
ITEM NUMBER:	T144.2G	DATE LAST CHANGED:	11/19/02
SECTION:	2750	TIME LAST CHANGED:	15:53:26
REQUESTER:	JSC		
TEST CODE:	CKT144	EMCC	STSALL
TRACKING NO.	F208-3		

1. DESCRIPTION: CONVOY COMMANDER VHF NET
(EMCC OPERATION ONLY)

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
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T1	T		EXTEND TO DFRC
T2	T		EXTEND TO WSSH via WSC

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/08/92

[PRD] DATABASE RECORD:	520845	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	04/03/98
		INITIAL DATE:	08/28/92
ITEM NUMBER:	T145G	DATE LAST CHANGED:	11/19/02
SECTION:	2750	TIME LAST CHANGED:	15:53:26
REQUESTER:	JSC		
SUBREQUESTER:	I-PH-B3		
TEST CODE:	CKT145	EMCC	STSALL
TRACKING NO.	F208-3	F804-1	

1. DESCRIPTION: WEATHER AIRCRAFT UHF (279.0 MHZ) DFRC
(EMCC OPERATION ONLY)

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
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T1	T	1	EXTEND TO KSC/CDSC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520845
ITEM NUMBER: T145G

NOTE: 1. This circuit will be activated for EMCC support.

REF: T1K FLS 3020 DBR 520264
T1.1EK FLS 3020 DBR 520265
T14EGKX FLS 2730 DBR 520260

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

[PRD] DATABASE RECORD: 520850 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/03/98
INITIAL DATE: 08/28/92
ITEM NUMBER: T146.1G DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
SUBREQUESTER: I-PH-B3
TEST CODE: CKT146 EMCC STSALL
TRACKING NO. F208-3 F804-1

1. DESCRIPTION: WEATHER AIECRAFT VHF (126.5 MHZ) WSSH if required
(EMCC OPERATOR ONLY)

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
T1	T	1	EXTEND TO KSC/CDSC

NOTE: 1. This circuit will be activated for EMCC support.

REF: T1K FLS 3020 DBR 520264
T1.1EK FLS 3020 DBR 520265
T14EGKX FLS 2730 DBR 520260

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520850
ITEM NUMBER: T146.1G

[PRD] DATABASE RECORD: 520862 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 09/01/92
INITIAL DATE: 09/01/92
ITEM NUMBER: T148.1G DATE LAST CHANGED: 11/19/02
SECTION: 2750 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
TEST CODE: CKT148 EMCC STSALL
TRACKING NO. F208-3

1. DESCRIPTION: PURGE NET (EMCC OPERATION ONLY)

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
T1	T		Extend to WSMR via WSC (if required)
T2	T		Extend to DFRC

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/08/92

[PRD] DATABASE RECORD: 520919 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/19/02
INITIAL DATE: 09/04/92
ITEM NUMBER: T149.2G DATE LAST CHANGED: 01/20/04
SECTION: 2750 TIME LAST CHANGED: 10:19:15

REQUESTER: JSC
TEST CODE: CKT149 EMCC STSALL
TRACKING NO. F02-11-5 F209-2A F705-1

1. DESCRIPTION: SITE/TN COORD/SHUTTLE SUPPORT (EMCC ONLY)

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520919
ITEM NUMBER: T149.2G

T1	T	1	EXTEND TO CCAS-XY
T2	T	1	EXTEND TO MILA VIA KSC CDSC
T3	T	1	EXTEND TO DFRC
T4	T	1	EXTEND TO WSC

NOTE: This circuit will be activated for EMCC support.

REF: T14EGKX FLS2730 DBR 520260

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/16/03

[PRD] DATABASE RECORD:	520900	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	09/04/92
		INITIAL DATE:	09/03/92
ITEM NUMBER:	T150G	DATE LAST CHANGED:	01/08/03
SECTION:	2750	TIME LAST CHANGED:	09:44:25

REQUESTER: JSC
TEST CODE: CKT150 STSALL
TRACKING NO. F209-2 F209-2A

1. DESCRIPTION: TN COORD

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
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T1	T		NIC DISTRIBUTION
T2	T		EXTEND TO JSC
T3	T		EXTEND TO WSC
T4	M		EXTEND TO MSFC

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/10/92

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 568092 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/19/02
INITIAL DATE:
ITEM NUMBER: GT150.2G DATE LAST CHANGED: 07/26/04
SECTION: 2750 TIME LAST CHANGED: 09:26:45

REQUESTER: GSFC JSC
TEST CODE: CKT150 STSALL
TRACKING NO. F02-11-5

1. DESCRIPTION: TN COORD

RESPONSIBLE AGENCY: WSC/GSFC

REF	CAP	TERMINATION LOCATION
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G1	T	WSC LOCAL DISTRIBUTION

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: WSC

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/23/04

[PRD] DATABASE RECORD: 527249 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/05/03
INITIAL DATE: 08/09/94
ITEM NUMBER: T154G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 13:25:47

REQUESTER: JSC
TEST CODE: ALPHSE FULL-TIME STSALL
TRACKING NO. F02-05-1 F408-3

1. DESCRIPTION: SHOTIME

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
T1	T/M		EXTEND TO JSC/MCC Distribution
T2	T/M		EXTEND TO GSFC Local Distribution (NIC)
T3	T/M		EXTEND TO WSC

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/05/03

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 527249
ITEM NUMBER: T154G

[PRD] DATABASE RECORD: 544754 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/22/98
INITIAL DATE: 04/22/98
ITEM NUMBER: T156G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 13:26:12

REQUESTER: JSC
TEST CODE: ALPHASE FULL-TIME JSC/DM
TRACKING NO. F804-3

1. DESCRIPTION: NORAD ALTERNATE

RESPONSIBLE AGENCY: GSFC/NISN

REF	CAP	TERMINATION LOCATION	NOTE
T1	T/M	EXTEND TO JSC	1
T2	T/M	EXTEND TO SPACE CONTROL CENTER IN DAHLGREN, VA.	1

NOTE: 1. Circuit will have Type 1 E&M signaling.

REF: ITEM T32G SECTION FLS2730 DBR 544753

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/24/02
RESPONSE:

[PRD] DATABASE RECORD: 567701 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/14/02
INITIAL DATE:
ITEM NUMBER: GHT157G DATE LAST CHANGED: 02/12/04
SECTION: 2750 TIME LAST CHANGED: 13:27:01

REQUESTER: GSFC MSFC JSC
TEST CODE: FULL-TIME STSALL

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 567701
 ITEM NUMBER: GHT157G

ASSOCIATED DOC: ISS VOL-I
 TRACKING NO. F02-11-3

1. DESCRIPTION: NISN COMM COORD

Responsible Agency: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
T1	T/M	1	EXTEND TO JSC
H2	T/M	1	EXTEND TO MSFC
G3	T/M	1	DISTRIBUTION TO GSFC NISN INTERNAL AREAS

NOTE: 1.Orderwire between JSC OST, GSFC COMM Manager, and MSFC NISN
 Service Group for all NISN related voice and data issues.

REF: ISS VOL-I ITEM GHT8G SECTION 2750 DBR 561754

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/22/02

[PRD] DATABASE RECORD:	558795	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	11/14/02
		INITIAL DATE:	03/29/01
ITEM NUMBER:	GHT158G	DATE LAST CHANGED:	02/12/04
SECTION:	2750	TIME LAST CHANGED:	13:29:39

REQUESTER: GSFC MSFC JSC
 TEST CODE: FULL-TIME STSALL

ASSOCIATED DOC: ISS VOL-I
 TRACKING NO. F01-03-2 F02-11-3

1. DESCRIPTION: WSC PLAYBACK COORD

RESPONSIBLE AGENCY:GSFC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 558795
 ITEM NUMBER: GHT158G

REF	CAP	NOTE	TERMINATION LOCATION
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T1	T/M	1	EXTEND TO JSC
H2	T/M	1	EXTEND TO MSFC
G3	T/M	1	EXTEND TO WSC

NOTE: This circuit will be used for all Shuttle and Station Playbacks.

REF: ISS VOL-I ITEM GHT13G SECTION 2750 DBR 558796

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)
 SUBSUPPLIER: WSC

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/22/02

[PRD] DATABASE RECORD: 563565 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 07/24/02
 INITIAL DATE:
 ITEM NUMBER: GX159G DATE LAST CHANGED: 02/12/04
 SECTION: 2750 TIME LAST CHANGED: 13:30:49

REQUESTER: GSFC DFRC
 TEST CODE: CKT159 FULL-TIME STSALL

1. DESCRIPTION: MISSION COMM ORDERWIRE

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
G1	T	1	Extend to DFRC

NOTE: 1. This is a communication troubleshooting order wire between
 DFRC COMM and GSFC NISN.

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 563565
 ITEM NUMBER: GX159G

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/24/02

[PRD] DATABASE RECORD: 563577 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 07/25/02
 INITIAL DATE:
 ITEM NUMBER: GT160.1G DATE LAST CHANGED: 01/16/03
 SECTION: 2750 TIME LAST CHANGED: 09:05:54

REQUESTER: GSFC JSC
 TEST CODE: CKT160 STSALL

1. DESCRIPTION: CAS COORD

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
G1	T		Extend to 21 SOPS
G2	T		Extend to WSC

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/14/03

[PRD] DATABASE RECORD: 563578 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 07/25/02
 INITIAL DATE:
 ITEM NUMBER: GH161G DATE LAST CHANGED: 02/12/04
 SECTION: 2750 TIME LAST CHANGED: 13:31:38

REQUESTER: GSFC MSFC
 TEST CODE: CKT161 FULL-TIME STSALL

1. DESCRIPTION: GSFC/MSFC COORD

RESPONSIBLE AGENCY: GSFC

REF	CAP	NOTE	TERMINATION LOCATION
H1	T		Extend to MSFC
G2	T		Extend to KSC/CDSC
G3	T		Extend to WSC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 563578
 ITEM NUMBER: GH161G

G4 T GSFC Local Distribution

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/14/03

[PRD] DATABASE RECORD: 576596 REQUIREMENT STATUS: APPROVED R
 DOCUMENT ID: FLT-I APPROVAL DATE: 06/08/04
 INITIAL DATE: 06/04/04
 ITEM NUMBER: T164G DATE LAST CHANGED: 07/26/04
 SECTION: 2750 TIME LAST CHANGED: 09:27:10

REQUESTER: JSC
 TEST CODE: DFRC LAULDG MILA PDL
 PRPFLY STSALL WLPS WSSH

TRACKING NO. F04-06-1

1. DESCRIPTION: BACKUP AIR-TO-GROUND UHF

RESPONSIBLE AGENCY: GSFC/GN

REF	CAP	TERMINATION LOCATION	NOTE
T1	T/M	EXTEND TO JSC	

REF: T24GX SECTION 2710 DBR 576595

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/23/04

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2755 - VIDEO/DATA TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 338292 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 09/21/89
INITIAL DATE: 09/21/89
ITEM NUMBER: G7G DATE LAST CHANGED: 07/03/02
SECTION: 2755 TIME LAST CHANGED: 08:10:39

REQUESTER: GSFC
TEST CODE: ALPHSE MIL STSALL

1. DESCRIPTION: LAUNCH TRAJECTORY ACQUISITION SYSTEM (LTAS)
RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
G1		R/O	1	GSFC
G2		R/O	1	MIL
G3		R/O	1	WLP
G4		R/O	1	GDS
G5		R/O	1	BDA

NOTE: 1. 2.4 kb/s - C-band data

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/21/89

[PRD] DATABASE RECORD: 10863 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/03/98
INITIAL DATE: 04/04/88
ITEM NUMBER: EGT13EGT DATE LAST CHANGED: 11/19/02
SECTION: 2755 TIME LAST CHANGED: 15:53:24

REQUESTER: ER GSFC JSC
TEST CODE: ER LATROT MIL STSALL

TRACKING NO. F008-1 F105-13 F106-4 F107-3 F107-3A
F804-1

1. DESCRIPTION: INTER-CENTER VECTOR (ICV)

RESPONSIBLE AGENCY: GSFC

REF	TEST CODE	CAP	NOTE	TERMINATION LOCATION
T1				MCC for Distribution

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2755 - VIDEO/DATA TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 10863
ITEM NUMBER: EGT13EGT

T2	MCC Extend to GSFC
G10	GSFC Extend to KSC/CDSC
E11	CDSC Extend to CCAS-XY
E12	CCAS-XY Extend to RTCS

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/14/98

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/03/98

[PRD] DATABASE RECORD:	568278	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	11/25/02
		INITIAL DATE:	
ITEM NUMBER:	G16.1G	DATE LAST CHANGED:	01/02/03
SECTION:	2755	TIME LAST CHANGED:	13:34:35

REQUESTER: GSFC
SUBREQUESTER: MILA MSC SPIF WSC
TEST CODE: ALPHSE STSALL
TRACKING NO. F02-11-6
PRIORITY: REQUIRED
RATIONALE: Required for antenna management, transponder disposition
by end users.

1. DESCRIPTION: CUSTOMER ANCILLARY SYSTEM

RESPONSIBLE AGENCY: GSFC

REF:	RATE	CAP	FROM GSFC TO	NOTE
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G1	56Kbps	CAS	Extend to WSC	
G2	56Kbps	CAS	Extend to 21SOPS	

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2755 - VIDEO/DATA TERMINATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 568278
ITEM NUMBER: G16.1G

G3	56Kbps	CAS	Extend to KSC/CDSC
G4		CAS	Extend to SPIF
G5		CAS	Extend to NIC

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/03/02

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2780 - OTHER COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 340886 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/05/98
INITIAL DATE: 05/03/91
ITEM NUMBER: T1G DATE LAST CHANGED: 09/04/03
SECTION: 2780 TIME LAST CHANGED: 10:53:44

REQUESTER: JSC
SUBREQUESTER: JSC/MT3
TEST CODE: EORBIT MIL STSALL TVPLAN

TRACKING NO. F008-1 F403-3 F801-1

1. DESCRIPTION: GN S-BAND TELEVISION REQUIREMENTS

GN S-band stations (MIL) are required to receive, record and remote Orbiter and payload downlinked real-time television to the MCC. Sites supporting real-time Orbiter downlinked TV should also be capable of supporting TV from the Orbiter Video Tape Recorder (VTR) and play back VTR dumps upon MCC request. Audio sources are required to be remotod to MCC such as A/G-1 and A/G-2 downlinks plus VIDD derived plus DSM stripped audio.

GSFC COORDINATION: GSFC-451.0/James Bangerter/301 286-7306

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/12/98

[PRD] DATABASE RECORD: 346640 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/05/98
INITIAL DATE: 03/26/91
ITEM NUMBER: T2G DATE LAST CHANGED: 04/21/04
SECTION: 2780 TIME LAST CHANGED: 12:01:50

REQUESTER: JSC
SUBREQUESTER: JSC/MT3
TEST CODE: EORBIT MIL STSALL TVPLAN

TRACKING NO. F008-1 F04-04-1 F103-3 F105-9 F110-3
F202-2 F203-2 F301-1 F303-6 F304-1
F403-1 F801-1

1. DESCRIPTION: GN S-BAND STATION REQUIREMENTS

The GN is required to support Shuttle television by providing the

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2780 - OTHER COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 346640
ITEM NUMBER: T2G

following:

- 1) Receive and record all downlinked video and demodulate into NTSC color, or black and white.
- 2) Provide passage of Shuttle generated Vertical Interval Test (VIT) and data signals (lines 11 through 19, fields 1 and 2 inclusive). These signals are defined as follows:

Lines 11 and 13 - camera control commands.
Line 12 - lens assembly telemetry bits.
Line 14 - pan and tilt angle status
Line 15 - spacecraft GMT
Line 16 - dynamic light range, gamma, over temperature.
Line 17 - camera location and serial number.
Line 18 - camera temperature, sequential color sync (every third field).
Line 19 - Shuttle test signals: composite on field 1 and multi-burst on field 2.

- 3) Provide video with the required ground generated Vertical Interval Test (VIT) signals:

NTC - 7 Composite - line 21, field 1.
FCC Multi-burst - line 21, field 2.
NTC -7 Combination - Vertical Interval Reference Signal (VIRS) on line 20, fields 1 and 2

- 4) Provide video with the required station ID signal on line 10, field 1: line 10, field 2 to be quieted for Earth Station noise measurements.

MILA - Ramp, no modulation.

- 5) Provide an operator interface with MCC for technical evaluation of received video, switching and troubleshooting as required.

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2780 - OTHER COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 346640
ITEM NUMBER: T2G

- a. Operational video control will be through Houston TV.
- b. Technical evaluation of received video and circuit information will be coordinated between GSFC TV and Houston TV.
- c. Direct coordination between Houston TV and the supporting tracking site will be conducted in accordance with existing NOSP (501-601) procedures.

6) Support MCC television testing during station validation procedures.

7) MIL is required to provide A/G1 or A/G2 or VIDDS decoded audio to the common carrier.

REF: Flight Vol II - FLP 2780 T1EG DBR 522727

COORDINATION: Houston TV/281 483-5995 or 5629

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/158 GSFC/334

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/12/98
RESPONSE TRACKING: Z104-1 Z104-2

[PRD] DATABASE RECORD: 353030 REQUIREMENT STATUS: APPROVED
DOCUMENT ID: FLT-I APPROVAL DATE: 06/02/87
INITIAL DATE: 06/02/87
ITEM NUMBER: T3G DATE LAST CHANGED: 11/19/02
SECTION: 2780 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
SUBREQUESTER: JSC/MT3
TEST CODE: EORBIT STSALL TVPLAN

1. DESCRIPTION: SN REQUIREMENTS

The SN is required to receive, record and remote Orbiter downlinked TV to JSC. Remoting of the return link voice

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2780 - OTHER COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 353030
ITEM NUMBER: T3G

from the emergency voice system to JSC is required for voice
synchronization with the video signal.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 08/10/87

[PRD] DATABASE RECORD: 355185 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 11/30/94
INITIAL DATE: 05/03/91
ITEM NUMBER: T4G DATE LAST CHANGED: 03/11/04
SECTION: 2780 TIME LAST CHANGED: 13:34:35

REQUESTER: JSC
SUBREQUESTER: JSC/MT3
TEST CODE: EORBIT STSALL TVPLAN
TRACKING NO. F202-2 F303-6 F304-1

1. DESCRIPTION: SN REQUIREMENTS

The SN is required to support Shuttle television by providing the
following:

- 1) Receive and record all downlinked video and demodulate into
baseband sequential, NTSC color or black and white video
- 2) Provide passage of Shuttle generated Vertical Interval Test (VIT)
and data signals (lines 11 through 19, fields 1 and 2 inclusive).
These signals are defined as follows:

Lines 11 and 13- camera control commands
Line 14 - pan and tilt angle status.
Line 15 - spacecraft GMT.
Line 16 - dynamic light range, gamma, over
temperature.
Line 17 - camera location and serial number.
Line 18 - camera temperature, sequential color
sync (every third field)
Line 19 - Shuttle test signals: composite on
field 1 and multiburst on field 2.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2780 - OTHER COMMUNICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 355185
ITEM NUMBER: T4G

- 3) Provide video with the required ground generated Vertical Interval Test (VIT) signals to the common carrier:

NTC -7- Composite - line 21, field 1.
FCC Multiburst - line 21, field 2.

- 4) Provide video with the required station ID signal on line 10, fields 1: line 10, field 2 to be quieted for Earth Station noise measurements.

WSC - NTC-7 Composite signal

- 5) Provide an operator interface with MCC for technical evaluation of received video, switching and troubleshooting as required.
a. Operational video control will be through Houston TV.
b. Technical evaluation of received video and circuit information will be coordinated between GSFC TV and Houston TV.
c. Direct coordination between Houston TV and the supporting tracking site will be conducted in accordance with existing NOSP (501-602) procedures.
- 6) Support MCC-H television testing during station validation procedures.
- 7) Provide A/G-1 or A/G-2 or VIDD decoded audio to the common carrier.

REF: Flight Vol II - FLP2780 T2G DBR 522728

COORDINATION: Houston TV/281 483-5995

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER: GSFC/334

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/05/94

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2800 - VIDEO

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 313 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/05/98
INITIAL DATE: 04/04/88
ITEM NUMBER: T6EGK DATE LAST CHANGED: 08/03/04
SECTION: 2800 TIME LAST CHANGED: 11:16:37

REQUESTER: JSC
SUBREQUESTER: JSC/MT3
TEST CODE: ALPHSE MIL PREFLT STSALL
TVPLAN
TRACKING NO. F301-1 F403-3 F801-1

1. DESCRIPTION: TV VALIDATION TESTING

When scheduled by JSC, GSFC is required to support television validation testing by the GN. Stations required to support are MIL and WSC. At KSC, some tests are supported by CDSC (5201 validations) and some are supported by MIL (5202 and H30 validations).

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: WR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/24/01

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/12/98

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: I-PZ-C2 KICS-109

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/13/98
RESPONSE TRACKING: ZFR8901 ZR5901

[PRD] DATABASE RECORD: 520279 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 02/05/93
INITIAL DATE: 06/29/92
ITEM NUMBER: T10G DATE LAST CHANGED: 12/03/02
SECTION: 2800 TIME LAST CHANGED: 13:43:22

REQUESTER: JSC
SUBREQUESTER: JSC/MT3
TEST CODE: EORBIT STSALL TVPLAN

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2800 - VIDEO

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 520279
ITEM NUMBER: T10G

TRACKING NO. F302-5

1. DESCRIPTION: WHITESAND COMPLEX DOWNLINK TV
ENCODING/DECODING

Video/audio encoding equipment is required at White Sands Complex (WSC). When scheduled by JSC, the equipment is used for scrambling shuttle television and A/G voice prior to transmission.

Decoders are required at JSC, MSFC, and GSFC. This equipment is utilized at these locations for decoding scrambled shuttle television and A/G voice transmitted from WSC.

WSC also has decoder for use as a test instrument.

Ref: HT26EG FLS2736 DBR 513735

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/08/93

[PRD] DATABASE RECORD: 521695 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 07/26/04
INITIAL DATE: 11/16/92
ITEM NUMBER: T11GKX DATE LAST CHANGED: 08/03/04
SECTION: 2800 TIME LAST CHANGED: 11:16:40

REQUESTER: JSC
TEST CODE: EDTREY STSALL TVPLAN
TRACKING NO. F03-08-2 F04-07-1 F211-7 F302-2 F410-2
F412-1 F906-1 F906-1A F906-1B

1. DESCRIPTION: PRE-LANDING TELEVISION COVERAGE OF
WEATHER CONDITIONS

Provide television coverage from at least one camera of the visible weather conditions at the landing site at 3 hours prior to landing. At 2 hours prior to landing, provide for additional television coverage from the runway area. These views will serve as an advisory source of

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2800 - VIDEO

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 521695
ITEM NUMBER: T11GKX

weather information for the Flight Control team to evaluate prior to committing to a Shuttle deorbit burn. All television support of visible weather will release support for MER coverage at touch down.

KSC Landings:

1. The mini camera view will be routed from MILA to JYVO for muxing with the weather camera feed, through the "COLORADO" mux unit for transmission on AMC-6 Transponder 5, two hours prior to touchdown.
2. The mini camera view will be required fulltime on Transponder 5, from T minus 2 hours until touchdown, at which time the transponder programming of Transponder 5 will revert back to the JSC MER.
3. Prior to T minus 2 hours, JSC will notify GYCC/JYVO if they desire a weather camera view. This will be provided on an "available" basis.
4. From T minus 2 hours to touchdown, the mux unit should be configured as follows: one channel for the mini-can signal from MILA, the second channel the output of the KSC News Facility production switcher. If JSC requests an additional weather camera view, they will call KSC/TV to provide the requested views.
5. JSC will have priority over the mini camera input to the COLORADO mux from T minus 2 hours to touchdown.

EAFB Landings:

TV will be routed to JSC via AMC-6 Transponder 9 as part of the NASA programming. Transponder 5 will provide a supporting feed to Dryden TV from JSC. JSC PAO will contact Dryden TV on PAO CUE and will request one view from at least one camera at landing minus 3 hours. In the event a request is made prior to landing minus 3 hours, support will be provided on an "as available" basis.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2800 - VIDEO

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 521695
ITEM NUMBER: T11GKX

TECHNICAL CONTACT: JSC/DV/Houston TV/281 483-5995 or 5629
AB-A/W. JOHNSON/321 867-2468

REF: T72KX LLS2800 DBR 521699
T85K LLS2755 DBR 522940

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/26/04

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: AB-A I-PZ-C2 KICS-109

SUPPLIER COMMITMENT: WILCO SEE RESPONSE RESPONSE DATE: 08/05/04
RESPONSE: Prior to landing minus 2 hours, KSC Test Team approval will
be
required for any PAD camera activity.

RESPONSE TRACKING: ZFR5301 ZFR9301 ZFR9401

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: F1

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/29/04

[PRD] DATABASE RECORD: 533569 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 07/26/04
INITIAL DATE: 06/10/96
ITEM NUMBER: T13GX DATE LAST CHANGED: 07/29/04
SECTION: 2800 TIME LAST CHANGED: 12:54:58

REQUESTER: JSC
SUBREQUESTER: JSC/MV
TEST CODE: LANDNG
TRACKING NO. F03-08-2 F04-07-1 F607-2 F609-1

1. DESCRIPTION: MINI CAMERAS VIDEO - DFRC

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2800 - VIDEO

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 533569
ITEM NUMBER: T13GX

DFRC will receive a downlink of the mini cameras signal from the Orbiter during the landing phase thorough wheel stop and L-1 day checkout via S-band FM link and distribute to Dryden TV for transmission on AMC-6 Transponder 9 (NASA TV).

CONTACTS: Don McCormack/JSC MV6/281 483-1267
Houston TV/JSC DV/281 483-5995

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/26/04

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: FR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/29/04

[PRD] DATABASE RECORD: 535240 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 07/09/99
INITIAL DATE: 11/07/96
ITEM NUMBER: T14GK DATE LAST CHANGED: 08/03/04
SECTION: 2800 TIME LAST CHANGED: 11:16:40

REQUESTER: JSC
SUBREQUESTER: JSC/MV
TEST CODE: LANDING
TRACKING NO. F611-2 F906-1 F906-1B

1. DESCRIPTION: MINI CAMERAS VIDEO - MILA

For all flights, MILA will receive the mini cameras from the cockpit via the Orbiter S-Band FM signal downlink for L-1 day checkout and during the landing phase. The mini camera views will be sent to JYVO via the CD&SC for switching to the COLORADO mux, 2 hours prior to landing.

CONTACTS: Don McCormack/JSC MV6/281 483-1267
Houston TV/JSC DV/281 483-5995 or 5629

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2800 - VIDEO

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 535240
ITEM NUMBER: T14GK

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/17/01

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: I-PZ-C2 KICS-109

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/09/99
RESPONSE: 1TVC1719/6TV6136

RESPONSE TRACKING: ZFR8305 ZFR9301

[PRD] DATABASE RECORD: 559047 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 07/13/01
INITIAL DATE: 05/31/01
ITEM NUMBER: T15GT DATE LAST CHANGED: 09/03/02
SECTION: 2800 TIME LAST CHANGED: 09:12:51

REQUESTER: JSC
TEST CODE: ALPHSE
TRACKING NO. F01-05-4 F01-06-1 F01-07-1

1. DESCRIPTION: COMPRESSED VIDEO (CLI)

The MCC is to provide the capability to compress and transport compressed video at a rate (serial clock and data) not to exceed 384 kbps across the NISN WAN.

NISN is to provide one each dedicated serial clock and data service between JSC and GSFC, and DFRC and JSC at a line rate notto exceed 384 kbps for the transmission on a shared-use basis of compressed video products.

REF: FLT-II ITEM T3GT FLP2800 DBR 559050

SUPPLIER: GSFC AGENCY: GSFC/450 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/13/01

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 2800 - VIDEO

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 559047
ITEM NUMBER: T15GT

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/13/01

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 3300 - RECOVERY

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04
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[PRD] DATABASE RECORD:	20925	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	FLT-I	APPROVAL DATE:	11/14/03
		INITIAL DATE:	06/13/91
ITEM NUMBER:	DT1DEGKXZ	DATE LAST CHANGED:	01/20/04
SECTION:	3300	TIME LAST CHANGED:	10:19:41

REQUESTER:	DDMS	JSC			
SUBREQUESTER:	JSC/DM3				
TEST CODE:	ALS	DDMS	EAFB	ELS	
	INFO	LANDNG	RECOVY	STSALL	
	TAL	WSSH			

TRACKING NO.	F01-04-1	F02-09-2	F03-03-1	F03-11-1	F106-3
	F106-5	F209-7	F308-5	F405-4	F503-4
	F709-3	F903-8			

1. DESCRIPTION: LANDING SITES

The Shuttle has three basic types of landing (recovery) sites.

The first type is the End-of-Mission Site (EOM). The EOM site has a convoy, Shuttle landing aids, dedicated rescue forces, and other support as required. KSC will always be the prime intended EOM landing site; Edwards is designated weather alternate and White Sands is the backup weather alternate. EOM convoy support will be called up by MMT. Alternate EOMs may require convoy support.

The second type is the Augmented Landing Site (ALS). This type includes Abort-Once-Around (AOA), Return-T0-Launch Site (RTLS), and Transoceanic-Abort-Landing (TAL) sites. Augmented sites have shuttle landing aids, Space Shuttle trained Crash/Rescue forces, medical support and NASA representation.

The third type is the Emergency Landing Site (ELS). Other than a 7,500 foot runway with a TACAN or DME within 50NM, NASA has no specified support requirements. They are used in a variety of situations (Ascent Abort, De-Orbit underburn, specific launch inclinations, etc). A subset of the ELS's are Department of Defense ELS's (DOD ELS) which are higher in priority on the ELS preference list. The DOD bases may offer improved communications, logistics and security support over civilian airfields. DDMS will advise these bases of their possible use, provide shuttle specific training (as determined by DDMS), and status them before and during each mission. Increased readiness may be possible with adequate advance notification and appropriate request from NASA.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 3300 - RECOVERY

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 20925
ITEM NUMBER: DT1DEGKXZ

DDMS provides periodic Space Shuttle specific training for DOD forces.

At DOD ALS's and ELS's, no funds should be expended for support of a deployed ground operations team prior to an actual shuttle landing unless specific funding approval is obtained from NASA Program/Project channels.

Changes to this requirement should be coordinated through NASA/JSC/MO and DDMS-O.

Technical Contact: JSC/MO/Don McCormack/281 483-1267
JSC/DM/Martin Linde/281 483-1943
PAFB/DDMS-O/321 494-5116
KSC/RE-M1/Dean Schaaf/321 86-9311

REF: LLS3300, ITEM DT1DEGKXZ, DBR 256702

SPACE SHUTTLE APPROVED LANDING SITES WITH TYPE DESIGNATORS

LANDING SITE	:EOM:RTLS:	AOA:	TAL:	ELS	:NOTE/REMARK :
Amberly, Australia	:	:	:	:L,H	:
Amilcar Cabral, Cape Verde	:	:	:	:L,	:
Andersen AFB, Guam	:	:	:	:L,H	: a
Arlanda, Sweden	:	:	:	:	H: d (Inclin > 57 deg)
Ascension	:	:	:	:	H: a
Atlantic City, NJ	:	:	:	:	H: a,b
Banjul, The Gambia	:	:	:	:L	:
Beja, Portugal	:	:	:	:	H: b
Ben Guerir, Morocco	:	:	:	: X :L,	H:
Bermuda	:	:	:	:L,	: b
Cecil Field, Fa	:	:	:	:L	: c
Cherry Point MCAS	:	:	:	:	H: a,b
China Lake NAS, CA	:	:	:	:L	: a,c
Diego Garcia, Chagos Is.	:	:	:	:L,	H: a
Dover AFB, DE	:	:	:	:	H: a,b (57 deg)
Dyess AFB, TX	:	:	:	:L,	H: a,c,e
Edwards AFB, CA	: X :	:	: X :	:L,	H: a
Ellsworth AFB, SD	:	:	:	:	H: a,d (for EABF)
Elmendorf, AK	:	:	:	:	H: a

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PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 3300 - RECOVERY

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 20925
ITEM NUMBER: DT1DEGKXZ

Esenboga, Turkey	:	:	:	:	:	H:
RAF Fairford, UK	:	:	:	:	:	H: a,b
Gander, Canada	:	:	:	:	:	H: b
Goose Bay, Canada	:	:	:	:	:	H: b (57 deg)
Grant County,WA(Moses Lake)	:	:	:	:	:	H: d (for EAFB)
Halifax Int'l, Canada	:	:	:	:	:	H: b
Hao Atoll, Fr Polynesia	:	:	:	:	:L,	H:
Honolulu, HI	:	:	:	:	:L,	H: a
Hoedspruit, So. Africa	:	:	:	:	:L,	:
Keflavik, Iceland	:	:	:	:	:	H: a,b (57 deg)
King Khalid, Saudi Arabia	:	:	:	:	:L,	H:
Kinshasa, Congo	:	:	:	:	:L	:
Koln-Bonn, Germany	:	:	:	:	:	H: b
Kennedy Space Center, FL	:	X	:	X	:	:L,
Lajes AB, Azores	:	:	:	:	:L	H: a,b (Mid Incl)
Las Palmas, Canary Is.	:	:	:	:	:L	: b
Le Tube, France	:	:	:	:	:L	H: b
Lincoln Municipal, NE	:	:	:	:	:	H: d (for EAFB)
MacDill AFB, FL	:	:	:	:	:L	: a,c
Monrovia, Liberia	:	:	:	:	:L	: b
Moron AB, Spain	:	:	:	:	X :L,	H: a
Mountain Home AFB, ID	:	:	:	:	:	H: a,d (for EAFB)
Myrtle Beach Jetport, SC	:	:	:	:	:	H: b (57 deg)
Nassau Intl, Bahamas	:	:	:	:	:L,	H: c (for KSC)
Oceana NAS, VA	:	:	:	:	:	H: a,b
Orlando Intl, FL	:	:	:	:	:L	: c
Otis ANGB, MA	:	:	:	:	:	H: a,b
Pearce, Australia	:	:	:	:	"L	:
Pease ANGB, NH	:	:	:	:	:	H: a,b
Shannon, Ireland	:	:	:	:	:	H: b
Skid Strip, FL	:	:	:	:	:L	: a,c
Souda Bay NAS, Crete	:	:	:	:	:L	: a (Inclin > 40 deg)
Stephenville, Canada	:	:	:	:	:	H: b
St. John's, Canada	:	:	:	:	:	H: b
Tamanrasset, Algeria	:	:	:	:	:L	: b (Mid Incl)
The Francis S. Gabreski,NY	:	:	:	:	:	H: a,b
Tindal, Australia	:	:	:	:	:L,	H:
Vandengerg AFB, CA	:	:	:	:	:L	: a,c
Wake Island	:	:	:	:	:L	H: a

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 20000

SECTION 3300 - RECOVERY

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 20925
 ITEM NUMBER: DT1DEGKXZ

Wallops, VA	:	:	:	:	:	H: b
Wilmington, NC	:	:	:	:	:	H: b
White Sands Space Harbor, NM	:	X	:	:	X	:L, H: a
Yokota AB, Japan	:	:	:	:	:	H: a
Zaragoza AB, Spain	:	:	:	:	X	:L, H:

NOTES: a = DoD ELS/Site
 b = Launch abort site
 c = Downrange abort/Underburn/Weather Alternate site loaded in onboard software
 d = Downrange abort/Underburn site not loaded in onboard software
 e = Weather alternate when WSSH is only AOA site
 L = low to mid inclination launch (28.5 -49 degrees)
 H = high inclination launch (50 - 63.5 degrees)

SUPPLIER: DDMS AGENCY: DDMS/X (DEPARTMENT OF DEFENSE)
 RESPONDER: 321 494-2143

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/08/03

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
 SUBSUPPLIER: ER

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/02/03

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/16/03

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
 SUBSUPPLIER: PH-M1 USK-426

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/14/03
 RESPONSE TRACKING: ZFR8601

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
 SUBSUPPLIER: OS

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 3300 - RECOVERY

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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CONTINUED

[PRD] DATABASE RECORD: 20925
ITEM NUMBER: DT1DEGKXZ

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/14/03

SUPPLIER: WSTF AGENCY: WSTF/RD (WHITE SANDS TEST FACILITY/HARBOR ()

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 11/14/03

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 3340 - RECOVERY - PLANNED AREAS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04
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[PRD] DATABASE RECORD: 240115 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 04/16/01
INITIAL DATE: 06/13/91
ITEM NUMBER: T4DEGX DATE LAST CHANGED: 01/20/04
SECTION: 3340 TIME LAST CHANGED: 10:20:08

REQUESTER: JSC
SUBREQUESTER: JSC/DM3
TEST CODE: DDMS EAFB ER LANDNG
STSALL
TRACKING NO. F008-1 F01-04-1 F106-3

1. DESCRIPTION: EAFB/DFRC LANDING SUPPORT

All facilities and ground support required for landing support at EAFB for primary/secondary landings are also required for abort landings. Identified support must be postured for an immediate response until the capability for an AOA has passed. Following the AOA opportunity the Convoy/DOD support will be available 4 hours prior to the Prime Landing Opportunity each day except as noted below. This convoy element will be "Called to Station" or released at the time. For other opportunities, the Convoy/DOD will be on an On-Call basis.

The following EAFB organizations must be available on a 90-minute recall for each support day unless released by the LSO:

Fire Department	Base Operations
Security Forces	Tower
BAK-12 Removal Team	Doctor, Medical Dispatcher, and 2 ambulances

These organizations will be released 1 hour prior to the last landing opportunity.

NASA NAV/Landings Aids will be on site ready to support 90-minutes prior to the first Landing Opportunity each day and will be released after the last deorbit TIG as coordinated.

SUPPLIER: DDMS AGENCY: DDMS-X ()
SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/14/03
SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 3340 - RECOVERY - PLANNED AREAS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 240115
ITEM NUMBER: T4DEGX

SUBSUPPLIER: EAFB

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/24/01

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/16/03

SUPPLIER: DFRC AGENCY: DFRC/OS (DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER: OS

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/27/01

[PRD] DATABASE RECORD: 355703 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 06/26/91
INITIAL DATE: 06/13/91
ITEM NUMBER: T14DEGK DATE LAST CHANGED: 12/03/02
SECTION: 3340 TIME LAST CHANGED: 11:20:12

REQUESTER: JSC
SUBREQUESTER: JSC/DM3
TEST CODE: DDMS LANDNG STSALL WSMR
WSSH
TRACKING NO. F008-1 F106-3 F106-7

1. DESCRIPTION: WHITE SANDS SPACE HARBOR SUPPORT

All facilities and ground support required for landing support at WSSH for Primary/Secondary landings are also required for abort landings at WSSH. When designated as primary AOA, all support must be in a posture of immediate response until the opportunity for AOA has passed. When designated as alternate AOA, DOD support will be positioned at KING 1 and will not deploy until a landing at WSSH is declared. After the AOA opportunity, support will be required as follows when WSSH is designated the prime landing opportunity for the day.

1. Convoy/DOD Fire, Crash, Rescue support will be available 4 hours prior to landing. They will be either called to stations or released at that time. (For other than the prime landing opportunity, the Convoy/DOD support will be on an on-call, best

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STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 3340 - RECOVERY - PLANNED AREAS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 355703
ITEM NUMBER: T14DEGK

effort basis.) Convoy/DOD support will include: NASA convoy; DOD
fire, crash, rescue; DOD security helos; and DOD medivac helos.

2. Nav/landing aids will be ready to support 1.5 hours prior to the
first landing opportunity each day and will be released after the
last deorbit TIG each day as coordinated.

Area radars, optics, WSMR telemetry reception and relay, and GSFC
NASCOM communications equipment support will be scheduled to support
as required. For short turnaround requirements, it is understood
that WSMR telemetry and radar support will be on best effort basis.

NASA convoy shall be expected to be on site to support as follows:

1. Launch day - AOA and prime rev should WSSH be delegated as
PLS.
2. Mission support - Given that WSSH has been chosen PLS, convoy
shall be prepared to support PRIME landing rev.(notification
to occur 4 hours prior to landing).
3. EOM - Given that WSSH is not PLS, support is not required.
4. EOM plus days - Support opportunities per JSC direction.

TECHNICAL CONTACTS: JSC/MV6/Don McCormack/281 483-1267
DOD/DDMS-X/ED LEVKA/(321) 494-2143

SUPPLIER: DDMS AGENCY: DOD/DDMS-X ()

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/15/91

SUPPLIER: ER AGENCY: 45 RANS/DOS (E - 45TH SPACE WING)
SUBSUPPLIER: WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/10/91

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/01/91

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 3340 - RECOVERY - PLANNED AREAS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 355703
ITEM NUMBER: T14DEGK

SUPPLIER: KSC AGENCY: KSC/PH-B (KENNEDY SPACE CENTER)
SUBSUPPLIER: PZ-A3 USK-426

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 07/11/91
RESPONSE TRACKING: ZR4303

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 3421 - PROTECTIONS FROM EMITTING SYSTEMS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 517451 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 01/10/02
INITIAL DATE: 11/06/91
ITEM NUMBER: T1EGX DATE LAST CHANGED: 11/19/02
SECTION: 3421 TIME LAST CHANGED: 15:53:26

REQUESTER: JSC
SUBREQUESTER: JSC/MS2
TEST CODE: LATROT STSALL ZTM03
TRACKING NO. F02-1-1 F111-1 F410-1 F903-2

1. DESCRIPTION: RF IMPINGEMENT ON SSO

To minimize possible RFI to the SSO avionics the field intensity at the SSO is to be limited in accordance with the following criteria:

FREQUENCY (MHz)	dB (MICROVOLT/METER)	VOLTS/METER
35MHz to 1000Mhz	134dBuV/m	5.0V/m
1000MHz	145.50dBuV/m	18.6V/m
1500MHz	147.97dBuV/m	25.0V/m
2000MHz	149.79dBuV/m	30.9V/m
2041.9MHz	149.92dBuV/m	31.3V/m
2106.4MHz	150.12dBuV/m	32.1V/m
2500MHz	151.21dBuV/m	36.3V/m
3000MHz	152.36dBuV/m	41.5V/m
3500MHz	153.34dBuV/m	46.5V/m
4000MHz	154.19dBuV/m	51.2V/m
5000MHz	155.60dBuV/m	60.3V/m
5690MHz	156.42dBuV/m	66.2V/m
6000MHz	156.70dBuV/m	68.9V/m
7000MHz	157.74dBuV/m	77.1V/m
8000MHz	158.58dBuV/m	85.0V/m
9000MHz	159.33dBuV/m	92.6V/m
10,000 to 40,000MHz	160dBuV/m	100V/M

In addition, no tracking systems under the control of the response organizations shall be allowed to track or illuminate the SSO unless they are:

- Required and scheduled for SSO support, or prior permission has been requested and approved by JSC.

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 3421 - PROTECTIONS FROM EMITTING SYSTEMS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

CONTINUED

[PRD] DATABASE RECORD: 517451
ITEM NUMBER: T1EGX

TECHNICAL CONTACT: JSC/TA/Joe Aquino/281 483-4033

SUPPLIER: ER	AGENCY: 45 RANS/DOS	(E - 45TH SPACE WING)
SUBSUPPLIER:	EAFB	ER	KMR
	NAWC	WR	WSMR

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/08/02

SUPPLIER: GSFC	AGENCY: GSFC/451	(GODDARD SPACE FLIGHT CENTER)
SUBSUPPLIER:	GSFC450.3		

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/10/02

SUPPLIER: DFRC	AGENCY: DFRC/OS	(DRYDEN FLIGHT RESEARCH CENTER)
SUBSUPPLIER:	FR		

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/26/02

CLASSIFICATION UNCLASSIFIED

STS OPS FLIGHT PRD, VOLUME I
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 20000

SECTION 4100 - DATA PROCESSING SPECIFICATIONS

PUBLICATION DATE: 10/11/90 REVISION: 0000 RUN DATE: 08/05/04

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[PRD] DATABASE RECORD: 226074 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: FLT-I APPROVAL DATE: 03/17/98
INITIAL DATE: 02/08/90
ITEM NUMBER: T1G DATE LAST CHANGED: 11/19/02
SECTION: 4100 TIME LAST CHANGED: 15:53:25

REQUESTER: JSC
TEST CODE: LATROT POSFLT STSALL
TRACKING NO. F610-2 F803-3

1. DESCRIPTION: SHUTTLE DOWNLINK

For Shuttle operational flights, information downlinked from the Orbiter and recorded at GN stations may be required to be played back to JSC and various other NASA facilities for data reduction. In the event playback is unsuccessful, MIL, and PDL may be requested to ship tapes to JSC. Otherwise, tapes will be degaussed 30 days unless a request to extend retaining tapes on station are submitted to the GSFC Technical Manager.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/17/98

THIS REPORT CONTAINS 217 PAGES

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